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Volume 79

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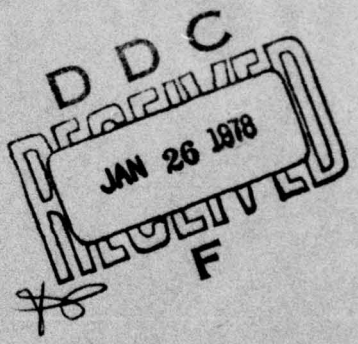
USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK

Volume 79

T-28D Aircraft, Near and Far-Field Noise



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AEROSPACE MEDICAL DIVISION
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FOR THE COMMANDER

HENNING E. VON GIERKE
Director
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Aerospace Medical Research Laboratory

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The USAF T-28D aircraft is a flight trainer powered by an R1820-86A reciprocating engine. This report provides measured and extrapolated data defining the bioacoustic environments produced by this aircraft operating on a concrete runup pad for three engine/power configurations. Near-field data are reported for two locations in a wide variety of physical and psychoacoustic measures: overall and band sound pressure levels, C-weighted and A-weighted sound levels, preferred speech interference level, perceived noise level, and

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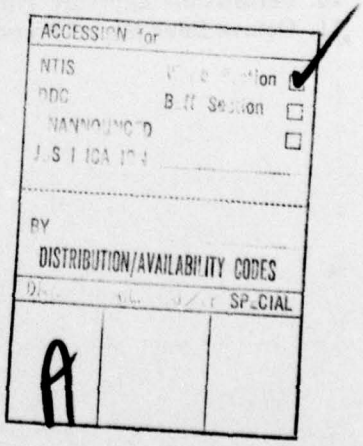
limiting times for total daily exposure of personnel with and without standard Air Force ear protectors. Far-field data measured at 19 locations are normalized to standard meteorological conditions and extrapolated from 50-8000 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and distances from the source. Refer to Volume I of this handbook, "USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application", AMRL-TR-75-50(1) 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc.

PREFACE

This report was prepared by the Biodynamic Environment Branch, Aerospace Medical Research Laboratory, under Project/Task 723104, Measurement and Prediction of Noise Environments of Air Force Operations.

The author gratefully acknowledges Mr. John Cole for his assistance in preparing this report, Mr. Robert England for his assistance in acquiring the raw data, Mr. Keith Kettler, Mr. Henry Mohlman and Mr. David Eilerman of the University of Dayton for assistance in the mechanics of data processing, and Mrs. Norma Peachey and Mr. Mike Patterson for assistance in typing and preparation of the graphics.



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INTRODUCTION

The USAF T-28D is a trainer-type aircraft powered by an R1820-86A reciprocating engine. The aircraft was manufactured by the Columbus Division of North American Rockwell and the engines by the Wright Aeronautical Division of Curtis-Wright.

This volume provides measured and extrapolated data defining bioacoustic environments produced by this aircraft during ground runup operations. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with ground runups of the T-28D aircraft.

This volume is one of a series published by the Aerospace Medical Research Laboratory (AMRL) under the same report number (AMRL-TR-75-50) as a multi-volume handbook that quantifies the noise environments produced at flight/ground crew locations and in surrounding communities by operations of Air Force aircraft and ground support equipment. The far-field, community-type, noise data in the handbook describe the noise produced during *ground operations* of aircraft, ground support equipment, and other ground-based equipment or facilities.

Volume 1 of this handbook discusses the objectives and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Volume 2 provides a method and data for adjusting the handbook's far-field noise data, which are for standard meteorological conditions (15°C temperature, 70% rel humidity, 0.760 meters Hg barometric pressure), to derive comparable data for other meteorological conditions. *Refer to Volumes 1 and 2* (references 2 and 3) for such information because it is not repeated in other handbook volumes.

A cumulative index lists those aerospace systems contained in the handbook, and identifies the specific volumes containing each type of environmental noise data available (i.e., inflight/flight crew and passenger noise, near-field/ground crew noise, far-field/community noise). Volume numbers are assigned sequentially as individual volumes are published. This index is periodically updated as individual volumes are published and is available upon request from AMRL/BBE, Wright-Patterson AFB, OH 45433. Organizations on the distribution list for the handbook will automatically receive a copy of each updated index.

Direct any questions concerning the technical data in this report and other handbook volumes to: AMRL/BBE, Wright-Patterson AFB, OH 45433; AUTOVON 78-53675 or 78-53664; Commercial (513) 255-3675 or (513) 255-3664.

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1. Cole, John N., *USAF Bioenvironmental Noise Data Handbook Volume 1: Organization, Content and Application,* AMRL-TR-75-50 (1), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.

2. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far-Field Noise,* AMRL-TR-75-50 (2), AMRL, WPAFB, OH, 1975.

NEAR-FIELD NOISE

MEASUREMENTS

AMRL acquired near-field noise data on the T-28D aircraft during ground runup operations of its reciprocating engine. For these tests the aircraft was located on a concrete runup pad at Hurlburt Field, Eglin, AFB, with no significant reflecting surfaces in the vicinity except the ground plane. Table 1 gives the surface meteorological conditions and the engine condition. The ground-crew chief selected power conditions and near-field locations generally used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand-held microphone in and around each location, probing all areas where a crew member's head would normally be located. He recorded all the noise samples on magnetic tape. During analysis of each sample, he determined the root-mean-square sound pressure using a 4- or 8-second integration time to derive a power-averaged level for each location. Figure 1 shows the two near-field locations where ground crews are usually located for maintenance and/or preflight checkout operations. Estimates of noise levels at other locations are difficult since the noise source is spatially distributed, i.e., not a point source. The noise levels at near-field locations can vary widely depending upon relative distances from each noise source (intake noise, exhaust noise, panel resonances, internal engine noise through the engine wall, etc.).

Table 1 lists the numeric/alphabetic designators used on the data pages in this report to identify the measurement locations and test conditions. For example, the designator 1/A means ground crew location 1 and test condition A.

RESULTS

The measured data presented in Table 2 define the sound pressure levels (SPL) produced by the T-28D aircraft at the two ground crew locations. This table includes the overall, 1/3 octave band, and octave band levels. From these data one can calculate the variety of measures given in Table 3, which are widely used to assess the effects of noise on personnel and their performance.

All near-field data are for the meteorological conditions at the time of test but are valid for all typical airbase meteorology because of the short sound propagation distances involved.

TABLE 1

MEASUREMENT LOCATIONS AND TEST CONDITIONS
FOR NEAR-FIELD NOISE MEASUREMENTS

T-28D Aircraft, Ground Runup, Hurlburt Field, Eglin AFB, 6 Aug 1971

Ground Crew Location

1	Engine Start, Fire Guard
2	Wheel Chock Pull

Aircraft Engine (and AGE) Operation

A	Idle Power

Meteorology

Temperature	28.9 C
Bar Pressure	0.763 M Hg
Rel Humidity	72 %
Wind — Speed	1 M/Sec (2 kt)
— Direction	60 Deg

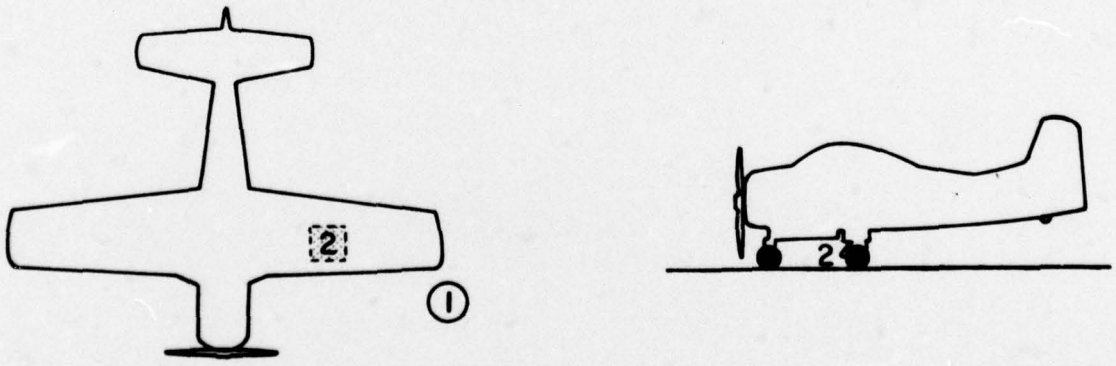

Figure 1. Near-Field Measurement Locations on Runup Pad at Hurlburt Field, Eglin AFB FL

FAR-FIELD NOISE

MEASUREMENTS

AMRL acquired both near- and far-field data during a 1-hour test period, thus keeping similar meteorological conditions. Figure 2 shows the ground runup pad, ground cover, aircraft orientation and the 19 microphone measurement sites on the semicircle. The center of the 30 meter radius semicircle used in surveying the R1820-86A engine was on the ground directly below the intersection of the aircraft's centerline and the plane passing through the engine's propeller plane.

Table 4 provides cockpit readouts of some engines characteristics (RPM and manifold pressure) for each power setting used in the far-field tests. Also listed in this table are the surface meteorological conditions during data acquisition.

All microphone measurement sites are in the acoustic far-field of the source where the sound wavefronts spherically diverge and the noise source may be regarded as a point source.

Test personnel acquired far-field noise data at Hurlburt Field by using a hand-held microphone (1.7 meters/5½ feet above the ground plane and pointed at the noise source, 0° incidence) and sequentially recording 5-10 seconds of data at each far-field location on a portable microphone/tape recorder system.

RESULTS

Table 5 lists the overall and 1/3 octave band SPL measured at the far-field locations under meteorological conditions at the time of the test. Data in all other figures and tables are based on these levels. These data were normalized to 100 meters distance and standard meteorological conditions (15°C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figure 3 which provides a compact summary of the far-field noise characteristics of the T-28D aircraft in a standard format.

Figure 4 and Table 6 present two basic acoustic measures, the acoustic power levels and the directivity index, respectively. The acoustic power level describes the power radiated by the source as a function of frequency. The directivity index is a standard acoustical engineering measure that describes the geometric way in which the source radiates this power as a function of both frequency and angle from source. These basic source measures are primarily of interest for acoustical engineers and noise generation/control specialists.

Estimates of noise levels for intermediate power conditions (e.g., 1800 RPM) can be determined as explained in Volume 1 of this handbook.

Figures 5 through 11 are sets of equal noise contours describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. They are, respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, speech interference level, permissible exposure times for personnel and octave band sound pressure levels.

Data excessively influenced by spurious background/electronic noise were eliminated from all figures and tables. No data are presented at the 170 and/or 180 degree locations for highest power setting because of turbulent air flow behind the aircraft. Typically, the A-weighted levels for these angles are 10 to 20 dBA below those at the 160 degree microphone location.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating. Data eliminated because they were near the background/electronic noise were generally not significant because the levels were so low (e.g., Table 5 and Figure 11 at idle power).

Volume 2 of the handbook describes the influence of meteorology on far-field noise environments, and provides, if required, the factors necessary to adjust the handbook's standard meteorological day data.

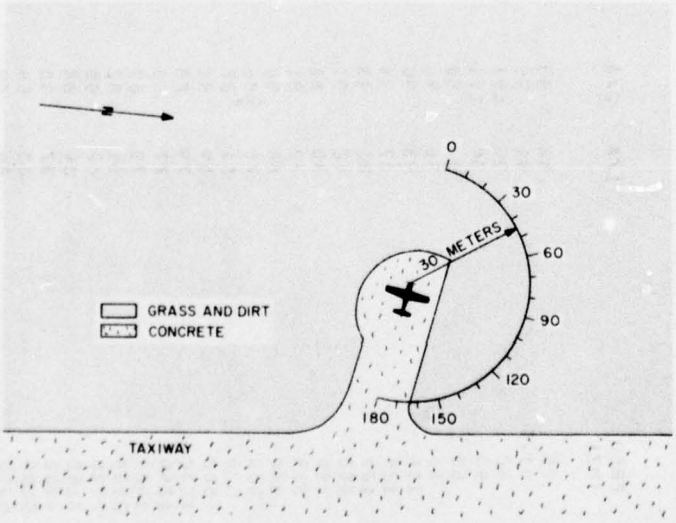

Figure 2. Far-Field Measurement Locations on Runup Pad at Hurlburt Field, Eglin AFB FL

TABLE: 2 — MEASURED SOUND PRESSURE LEVEL (DB) 1/3 OCTAVE BAND

IDENTIFICATION:
OMEGA 3.2
TEST 71-019-107
RUN 01
04 DEC 74
PAGE F1

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

FREQ (HZ)	LOCATION/CONDITION 1/A	2/A
25	86	93
31.5	86	95
40	95	101
50	94	101
63	93	98
80	90	94
100	93	96
125	87	94
160	82	93
200	82	91
250	80	88
315	82	91
400	84	90
500	78	86
630	81	87
800	84	91
1000	79	88
1250	77	90
1600	79	89
2000	81	92
2500	82	90
3150	84	88
4000	87	90
5000	83	88
6300	84	89
8000	85	92
10000	85	91
OVERALL	102	108

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: 2	MEASURED SOUND PRESSURE LEVEL (DB) OCTAVE BAND		IDENTIFICATION:
NOISE SOURCE/SUBJECT:	OPERATION:		OMEGA 3.2
			TEST 71-019-107
T-28D AIRCRAFT			RUN 01
GROUND CREW			04 DEC 74
NEAR FIELD NOISE LEVELS			PAGE J1

	LOCATION/CONDITION	
FREQ (HZ)	1/A	2/A
31.5	96	102
63	97	103
125	94	99
250	86	95
500	86	93
1000	86	95
2000	85	95
4000	90	93
8000	89	95
OVERALL	102	108

TABLE: 3 MEASURES OF HUMAN NOISE EXPOSURE

IDENTIFICATION:
OMEGA 3.2
TEST 71-019-107
RUN 01
04 DEC 74
PAGE H1

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

	LOCATION/CONDITION 1/A	2/A
HAZARD/PROTECTION		
C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DBC) AT EAR		
A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DBA) AT EAR		
MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)		
NO PROTECTION		
OASLC	101	107
OASLA	95	101
T	71	25
MINIMUM QPL EAR MUFFS		
OASLA*	76	82
T	960	679
AMERICAN OPTICAL 1700 EAR MUFFS		
OASLA*	73	78
T	960	960
V-51R EAR PLUGS		
OASLA*	68	75
T	960	960
AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS		
OASLA*	57	63
T	960	960
H-133 GROUND COMMUNICATION UNIT		
OASLA*	69	75
T	960	960
COMMUNICATION		
PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)		
PSIL	86	94
ANNOYANCE		
PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNDB)		
TONE CORRECTION (C IN DB)		
PNLT	112	117
C	1	1

* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.

TABLE 4

TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS

T-28D Aircraft, Ground Runup, Hurlburt Field, Eglin AFB
6 Aug 1971

Aircraft Engine Operation

Idle/Taxi Power	1200 RPM 19 Inches Manifold Pressure
Magneto Check	2250 RPM 30 RPM MAP
Military Power	2650 RPM 45 RPM MAP

Meteorology

Temperature	28.9 C
Bar Pressure	0.763 M Hg
Rel Humidity	72 %
Wind — Speed	1 M/Sec (2 kt)
— Direction	60 Deg

TABLE 5: MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 30 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 01
09 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE/TAXI POWER
1200 RPM

METEOROLOGY:
TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 72 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25										66<			66<						
31.5	69<	71<	67<	70<	66<	67<	67<	67<	66<	68<		68<	68<	68<	68<	69<	69<	67<	68<
40	85	88	82	87	81	80	78	74<	73<	82	82	84	83	83	84	85	85	81	83
50	78	77	75	74	73	73	75	77	79	80	79	79	80	78	79	78	77	77	80
63	76<	79	82	85	88	89	90	90	91	92	92	93	94	93	93	92	89	82	72<
80	86	88	85	86	87	86	86	85	86	86	88	88	88	90	88	86	84	82	80
100	86	86	85	86	86	86	86	87	87	87	87	88	89	89	90	88	85	80	80
125	85	86	86	85	85	85	86	85	85	84	84	85	87	87	88	87	86	83	81
160	86	88	87	84	85	84	83	83	82	82	82	82	83	83	83	84	85	80	83
200	83	85	85	79	80	79	81	83	82	81	81	82	83	82	81	81	82	78	77
250	79	81	83	77	77	77	78	78	79	79	77	78	79	81	80	81	83	74	77
315	81	80	80	76	76	76	77	77	77	80	79	79	79	81	81	81	83	75	78
400	82	82	81	80	77	76	79	79	79	82	82	81	81	82	81	81	84	76	78
500	80	82	81	76	76	76	75	76	76	76	78	75	76	77	77	78	81	74	78
630	76	77	76	72	73	71	70	70	71	72	74	74	74	76	75	75	79	69	73
800	74	76	76	73	74	72	70	70	70	70	73	73	74	76	76	76	80	68	72
1000	73	72	74	73	72	70	68	68	68	69	70	73	74	74	75	75	78	65	66
1250	72	71	72	71	71	70	69	67	68	69	71	71	72	71	73	74	77	64	66
1600	71	71	73	72	71	70	70	69	68	71	72	71	72	72	71	72	74	61	63
2000	70	70	72	71	69	70	70	71	71	72	73	71	71	71	72	71	73	62	64
2500	69	69	72	69	68	69	69	74	75	76	75	73	71	70	71	69	70	60	62
3150	67	66	68	66	65	66	67	67	71	72	72	70	67	66	67	66	68	59	60
4000	67	66	68	66	66	66	68	69	71	73	76	73	68	66	67	66	68	59	60
5000	66	66	67	65	64	64	65	67	69	71	73	73	66	65	66	65	67	59	59
6300	65	65	66	65	65	65	67	68	70	71	73	71	65	63	65	63	65	58	58
8000	65	65	66	65	65	66	68	69	70	72	74	72	65	63	65	63	64	57	58
10000	64	64	64	64	64	64	66	66	68	71	71	71	62	62	64	61	61	55	56
OVERALL	94	96	95	94	94	94	94	95	95	96	96	96	97	97	97	96	96	90	91

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE 5 MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 30 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 72 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	72<	79	79	81	83	84	84	85	85	85	85	85	85	85	85	83	80	84	87
31.5	75<	77	80	82	85	87	89	90	91	92	92	94	93	92	91	90	86	83	84
40	81	83	88	92	95	97	98	100	101	102	102	103	103	103	102	100	97	90	86
50	79	80	83	84	86	87	88	89	90	90	91	93	93	92	91	90	86	81	79
63	89	86	93	91	92	90	86	91	96	99	101	102	102	100	98	93	88	85	81
80	102	96	102	102	103	100	85	100	107	110	112	112	113	112	109	102	95	95	90
100	88	89	89	87	88	90	92	94	93	95	96	98	98	100	99	97	90	84	84
125	90	91	94	89	91	92	95	98	98	101	102	104	105	107	109	108	102	94	86
160	100	98	99	98	99	101	101	102	105	106	107	108	108	109	107	106	107	101	88
200	91	93	91	90	89	88	88	93	96	97	95	94	97	100	99	99	97	90	81
250	91	93	90	88	91	88	89	94	95	97	95	93	96	96	96	94	92	84	81
315	92	92	93	91	91	88	92	92	91	91	96	94	95	95	96	97	89	81	78
400	94	93	93	92	91	90	91	91	93	93	95	96	97	96	95	96	90	84	81
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1250	90	89	88	87	88	88	88	88	88	90	92	93	95	92	90	92	88	81	79
1600	89	90	89	88	89	89	90	91	90	91	93	92	95	91	88	90	85	81	79
2000	91	91	90	89	90	91	91	94	93	96	98	95	96	94	90	90	87	82	80
2500	89	90	89	89	89	90	91	93	95	96	102	97	95	94	88	89	85	80	78
3150	86	86	87	86	87	88	88	91	93	95	97	94	92	92	86	86	83	78	76
4000	87	86	88	88	90	91	92	94	94	95	96	94	92	93	86	85	84	78	75
5000	85	86	86	87	88	89	89	91	93	94	96	92	90	91	84	84	82	76	74
6300	85	84	85	87	87	88	89	91	92	92	94	90	89	89	82	82	80	74	72
8000	85	85	86	86	87	89	89	91	92	93	94	91	88	89	82	82	80	75	72
10000	83	83	84	85	85	86	88	89	90	90	92	89	86	87	79	79	78	72	70
OVERALL	107	105	107	106	107	106	106	108	111	113	115	115	116	116	114	112	109	103	97

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE 5 MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 30 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 72 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	77	79	80	82	82	81	84	86	84	87	87	89	88	88	88	88	88		
31.5	80	80	81	83	83	83	85	84	85	86	86	87	88	89	88	86	86		
40	89	83	89	96	98	100	102	104	105	107	108	109	110	110	110	108	104		
50	83	82	83	89	92	93	95	97	95	98	100	102	102	103	102	101	99		
63	86	87	90	92	93	94	94	95	96	97	98	99	100	100	100	97	95		
80	98	98	96	102	106	106	100	101	109	113	115	117	117	117	115	111	101		
100	96	96	93	100	104	103	98	99	103	110	112	115	114	115	114	110	101		
125	94	91	93	95	97	99	100	101	101	102	103	104	103	105	107	107	104		
160	99	99	102	104	104	107	110	112	113	113	112	114	113	112	115	116	112		
200	97	98	97	100	101	103	107	108	106	108	109	112	112	112	113	110	107		
250	92	92	93	93	99	96	92	98	102	109	109	108	97	103	103	100	99		
315	94	94	94	92	95	95	97	101	102	102	107	105	102	103	104	104	97		
400	98	96	95	96	96	95	98	101	101	105	107	105	103	104	105	104	98		
500	95	94	95	96	97	96	96	101	100	103	101	101	102	101	103	101	95		
630	93	91	91	92	91	91	94	96	97	98	99	98	98	96	98	96	92		
800	94	94	94	95	93	92	95	96	96	99	99	98	100	97	97	98	94		
1000	95	93	93	93	93	92	93	95	96	97	97	97	98	98	97	97	93		
1250	94	93	94	93	93	93	94	96	96	98	98	97	99	100	99	98	95		
1600	95	95	95	93	95	95	95	96	97	99	100	99	100	98	97	98	95		
2000	95	96	96	96	97	96	98	98	100	102	104	103	102	99	99	99	96		
2500	95	96	97	97	97	98	99	101	102	104	106	106	102	102	99	99	97		
3150	93	92	94	94	96	96	98	100	102	101	105	104	99	100	97	97	95		
4000	94	95	94	96	96	98	99	101	101	102	104	104	100	101	98	98	96		
5000	93	93	94	96	97	98	98	101	101	102	104	104	99	100	97	97	95		
6300	92	92	93	94	95	96	97	99	100	101	103	102	97	98	96	96	93		
8000	92	92	93	94	95	96	98	100	100	100	102	102	97	97	96	95	93		
10000	90	90	91	92	93	94	96	98	98	98	100	99	94	95	93	93	90		
OVERALL	108	108	108	111	113	113	114	116	117	120	121	122	121	121	121	120	115		

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: DIRECTIVITY INDEX (DB)

6

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE/TAXI POWER
1200 RPM

METEOROLOGY:
TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 72 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 01
09 MAY 75
PAGE 4

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
1/3 OCTAVE																			
25										8			8						
31.5	1	4	-1	3	-1	-0	-0	-1	-1	0		1	0	0	1	2	1	-0	1
40	3	6	-1	4	-2	-3	-5	-8	-9	-1	-0	2	1	1	1	3	2	-1	1
50	0	-1	-3	-4	-5	-5	-3	-1	1	2	1	1	2	0	1	-0	-1	-1	2
63	-15	-12	-9	-6	-3	-2	-1	-1	0	1	1	2	3	2	2	1	-2	-9	-19
80	-1	1	-2	-1	-0	-1	-1	-2	-1	-1	1	1	1	3	1	-1	-3	-5	-7
100	-2	-1	-2	-1	-2	-2	-1	-0	-1	-0	-0	0	2	2	2	1	-2	-7	-7
125	-1	1	1	-1	-1	-1	-0	-0	-1	-1	-2	-1	1	2	2	1	1	-3	-5
160	2	5	4	0	1	0	-0	-0	-1	-1	-2	-1	0	0	-0	0	1	-3	-0
200	1	3	3	-2	-1	-3	-1	2	0	-1	-0	0	2	1	-1	-1	1	-3	-4
250	0	2	4	-2	-2	-2	-1	-1	0	-0	-2	-1	-0	2	1	2	4	-5	-2
315	2	1	1	-3	-3	-3	-2	-2	-2	1	-0	0	0	2	2	2	4	-4	-1
400	2	1	1	-1	-3	-4	-2	-1	-2	1	1	0	1	1	1	1	3	-5	-2
500	3	5	4	-1	-1	-1	-2	-1	-1	-0	1	-1	-1	0	-0	1	4	-3	1
630	2	3	2	-2	-0	-3	-3	-3	-3	-2	0	0	1	2	2	2	5	-5	-0
800	0	3	3	-0	0	-2	-4	-4	-4	-3	-1	-1	1	2	2	3	6	-6	-2
1000	1	-0	2	1	0	-2	-4	-4	-4	-3	-2	1	2	2	3	3	6	-7	-6
1250	1	-0	1	0	-0	-2	-2	-4	-3	-2	-0	-0	1	0	2	3	6	-7	-5
1600	0	-0	2	1	-0	-1	-1	-2	-3	-0	1	-0	1	1	0	1	3	-10	-8
2000	-1	-1	1	0	-2	-1	-1	0	0	1	2	-0	0	-0	1	-0	2	-9	-7
2500	-4	-3	-1	-4	-5	-3	-3	2	2	3	2	0	-2	-3	-1	-4	-2	-12	-10
3150	-2	-2	-1	-3	-4	-3	-2	-2	2	3	3	1	-1	-2	-1	-3	-0	-10	-9
4000	-3	-4	-2	-4	-5	-5	-2	-1	0	3	6	3	-3	-5	-4	-5	-2	-12	-11
5000	-2	-3	-2	-4	-5	-5	-3	-2	0	3	4	4	-3	-4	-3	-4	-1	-10	-10
6300	-3	-3	-3	-4	-4	-3	-2	-0	1	3	5	3	-4	-5	-4	-6	-3	-10	-11
8000	-4	-4	-4	-4	-4	-3	-2	0	1	3	5	3	-4	-6	-4	-6	-5	-12	-11
10000	-4	-4	-3	-4	-4	-4	-2	-1	1	3	4	4	-5	-6	-4	-7	-6	-12	-11
OCTAVE																			
31.5	3	6	-1	4	-2	-2	-5	-7	-8	-1		2	1	1	1	3	2	-1	1
63	-6	-4	-5	-4	-2	-2	-1	-1	-0	0	1	1	2	2	2	0	-3	-7	-9
125	-0	1	0	-1	-1	-1	-1	-0	-1	-1	-1	-0	1	1	2	1	-0	-4	-4
250	1	3	3	-2	-2	-3	-1	0	-0	0	-1	-0	1	1	0	1	3	-4	-3
500	2	3	2	-1	-2	-3	-2	-1	-2	1	1	-0	0	1	1	1	4	-4	-1
1000	0	1	2	0	0	-2	-3	-4	-4	-3	-1	-0	1	2	2	3	6	-6	-4
2000	-1	-2	1	-1	-2	-2	-2	1	1	2	2	0	-0	-1	-0	-1	1	-11	-8
4000	-3	-3	-2	-4	-5	-4	-3	-2	1	3	5	3	-2	-4	-3	-4	-1	-11	-10
8000	-4	-4	-3	-4	-4	-3	-2	-0	1	3	4	3	-4	-6	-4	-6	-5	-11	-11
OVERALL	-1	0	-1	-2	-2	-2	-1	-1	-1	0	0	1	2	2	2	1	-0	-5	-5

TABLE: DIRECTIVITY INDEX (DB)

6

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 72 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
PAGE 4

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
1/3 OCTAVE																			
25	-12	-5	-5	-3	-1	0	-0	1	1	1	1	1	1	1	1	-1	-4	-0	3
31.5	-15	-14	-10	-8	-6	-3	-2	-1	0	1	1	3	2	2	0	-1	-4	-8	-7
40	-20	-18	-13	-9	-6	-4	-2	-1	1	1	1	2	3	3	1	-0	-4	-11	-14
50	-11	-10	-7	-6	-4	-3	-2	-1	-0	-0	1	3	3	2	1	-0	-4	-9	-11
63	-9	-12	-5	-7	-6	-8	-12	-7	-2	1	3	4	4	2	-0	-5	-10	-13	-17
80	-6	-12	-6	-7	-6	-9	-24	-9	-2	1	3	3	5	3	1	-6	-13	-14	-18
100	-7	-6	-7	-9	-7	-6	-3	-2	-3	-1	0	3	3	5	4	1	-5	-12	-11
125	-13	-12	-8	-14	-12	-11	-8	-5	-5	-2	-1	1	2	5	6	5	-1	-8	-16
160	-5	-7	-6	-8	-7	-5	-4	-3	-0	0	1	3	2	3	2	1	1	-5	-18
200	-5	-2	-4	-6	-6	-7	-7	-3	0	2	-0	-2	1	4	3	4	2	-6	-14
250	-3	-1	-4	-6	-3	-6	-5	-0	1	3	1	-1	2	2	2	-0	-2	-10	-13
315	-2	-1	-1	-2	-3	-5	-1	-2	-2	-2	3	0	2	1	3	3	-5	-12	-16
400	-0	-1	-1	-2	-3	-3	-3	-3	-1	-1	1	2	3	2	2	2	-4	-10	-13
500	1	-2	-2	-5	-3	-7	-4	-2	0	2	0	-0	4	3	0	1	-5	-11	-14
630	-0	2	0	-2	-2	-1	-2	-4	-3	0	4	-0	3	1	-0	1	-4	-9	-10
800	1	1	1	-2	-2	-4	-3	-6	-2	-0	4	2	3	1	-1	0	-4	-9	-13
1000	1	-1	-1	-2	-3	-3	-3	-4	-3	-1	3	4	3	-0	-2	-1	-5	-9	-12
1250	-1	-2	-3	-3	-3	-3	-3	-3	-2	-1	1	3	4	2	-0	1	-3	-10	-12
1600	-2	-1	-2	-3	-2	-2	-1	-0	-1	-0	2	1	4	0	-3	-1	-6	-10	-12
2000	-2	-3	-3	-5	-3	-3	-2	-0	-0	2	4	1	2	1	-4	-3	-7	-12	-14
2500	-6	-6	-7	-6	-6	-5	-4	-2	-0	1	6	2	-0	-1	-7	-6	-10	-15	-17
3150	-6	-6	-5	-6	-5	-4	-4	-1	1	3	5	2	0	-0	-6	-6	-9	-14	-16
4000	-6	-6	-5	-4	-3	-2	-0	2	1	2	3	2	-1	0	-7	-7	-9	-15	-17
5000	-6	-6	-6	-5	-4	-3	-2	-0	2	3	5	1	-1	-1	-8	-8	-10	-15	-18
6300	-5	-6	-5	-3	-3	-2	-1	1	2	2	4	1	-1	-0	-8	-8	-10	-16	-17
8000	-5	-5	-4	-4	-3	-1	-1	1	2	3	4	1	-2	-1	-8	-8	-10	-15	-18
10000	-5	-5	-4	-3	-3	-2	-0	1	2	2	4	1	-2	-1	-9	-9	-10	-16	-18
OCTAVE																			
31.5	-19	-16	-12	-8	-6	-4	-2	-1	1	1	1	2	3	2	1	-0	-4	-10	-10
63	-6	-12	-6	-7	-6	-9	-18	-8	-2	1	3	3	5	3	1	-6	-13	-14	-18
125	-7	-8	-7	-9	-8	-6	-5	-4	-1	-1	0	2	2	4	4	2	0	-6	-17
250	-3	-2	-3	-5	-4	-6	-4	-2	-0	1	1	-1	2	3	3	3	-0	-8	-14
500	0	-1	-1	-3	-3	-4	-3	-3	-1	0	1	1	3	2	1	2	-4	-10	-12
1000	0	-0	-1	-2	-3	-3	-3	-4	-2	-1	3	3	3	1	-1	0	-4	-9	-12
2000	-4	-3	-4	-5	-4	-4	-3	-1	-0	1	5	1	2	-0	-5	-4	-8	-13	-15
4000	-6	-6	-5	-5	-4	-3	-2	0	1	3	4	2	-1	-0	-7	-7	-9	-14	-17
8000	-5	-5	-4	-3	-3	-2	-1	1	2	3	4	1	-2	-1	-8	-8	-10	-16	-18
OVERALL	-6	-8	-6	-7	-6	-6	-6	-4	-1	1	2	3	3	3	2	-0	-3	-9	-16

TABLE: DIRECTIVITY INDEX (DB)

6

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-044
RUN 03

09 MAY 75

PAGE 4

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 72 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
1/3 OCTAVE																			
25	-9	-7	-6	-4	-4	-5	-3	-0	-2	0	1	3	1	2	1	1	1		
31.5	-6	-6	-5	-3	-3	-3	-1	-2	-1	0	0	1	2	3	2	-0	0		
40	-18	-24	-18	-11	-8	-7	-4	-3	-1	-0	1	2	3	3	3	1	-3		
50	-16	-17	-16	-10	-7	-6	-4	-2	-4	-1	1	3	3	4	3	2	0		
63	-11	-10	-7	-5	-4	-3	-3	-2	-1	0	1	2	3	3	3	0	-2		
80	-15	-15	-17	-11	-7	-7	-13	-12	-4	0	2	4	4	4	2	-2	-12		
100	-14	-14	-17	-11	-6	-7	-12	-11	-7	-0	2	4	4	4	3	-0	-9		
125	-8	-11	-10	-8	-5	-4	-2	-1	-2	-0	1	1	1	2	4	5	1		
160	-13	-12	-10	-8	-8	-5	-2	-0	1	1	1	2	1	-0	3	4	-0		
200	-12	-11	-12	-9	-8	-6	-2	-1	-3	-1	-0	3	3	3	4	1	-2		
250	-12	-12	-11	-11	-5	-8	-12	-6	-2	5	5	4	-7	-1	-1	-4	-5		
315	-8	-9	-9	-10	-8	-8	-5	-1	-0	-0	5	3	-1	1	2	1	-6		
400	-5	-6	-8	-7	-6	-8	-5	-2	-2	2	4	2	-0	2	2	2	-5		
500	-5	-6	-6	-4	-3	-5	-4	1	-1	2	1	0	2	1	3	1	-5		
630	-3	-5	-5	-4	-5	-5	-2	-0	0	2	2	2	2	-0	1	-1	-4		
800	-3	-3	-3	-2	-4	-5	-2	-1	-1	2	2	1	3	-0	0	1	-3		
1000	-1	-3	-2	-3	-3	-4	-2	-1	0	1	1	1	2	2	1	1	-3		
1250	-3	-4	-3	-4	-4	-4	-3	-1	-1	1	1	0	2	3	2	1	-2		
1600	-3	-2	-3	-4	-3	-2	-2	-2	-0	1	2	2	2	1	-1	1	-2		
2000	-5	-4	-4	-4	-3	-4	-2	-2	-0	2	4	3	2	-1	-1	-1	-4		
2500	-8	-7	-5	-6	-5	-5	-3	-2	-0	1	5	4	-1	-0	-4	-3	-5		
3150	-8	-8	-6	-6	-5	-4	-2	-0	2	1	4	4	-1	-1	-3	-3	-5		
4000	-7	-6	-7	-5	-4	-3	-2	-0	0	1	3	3	-1	0	-3	-3	-4		
5000	-7	-7	-6	-5	-3	-3	-2	0	1	2	4	3	-1	-1	-3	-4	-6		
6300	-7	-7	-6	-5	-4	-3	-2	0	1	2	4	3	-2	-1	-3	-3	-6		
8000	-7	-7	-6	-5	-4	-2	-1	1	2	2	4	3	-2	-2	-3	-4	-6		
10000	-7	-6	-6	-4	-3	-2	-0	1	1	2	4	3	-2	-1	-3	-4	-7		
OCTAVE																			
31.5	-17	-21	-17	-10	-8	-6	-4	-3	-1	-0	1	2	3	3	3	1	-3		
63	-14	-15	-16	-11	-7	-7	-11	-10	-4	0	2	4	4	4	3	-2	-9		
125	-13	-13	-12	-9	-7	-6	-4	-2	-1	0	1	3	2	2	3	3	-2		
250	-11	-11	-11	-9	-7	-6	-3	-1	-2	1	2	3	2	2	3	1	-3		
500	-5	-6	-6	-5	-5	-6	-4	-1	-1	2	3	2	1	1	2	1	-5		
1000	-2	-3	-3	-3	-3	-4	-2	-1	-1	1	1	1	3	2	1	1	-2		
2000	-6	-5	-4	-5	-4	-4	-3	-2	-0	1	4	3	1	-0	-2	-2	-4		
4000	-7	-7	-6	-5	-4	-3	-2	0	1	1	4	4	-1	-0	-3	-3	-5		
8000	-7	-7	-6	-5	-3	-3	-1	1	1	2	4	3	-2	-1	-3	-4	-6		
OVERALL	-10	-11	-10	-8	-6	-5	-5	-3	-2	1	2	3	2	3	3	1	-4		

FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE/TAXI POWER
1200 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 01
09 MAY 75
PAGE 6

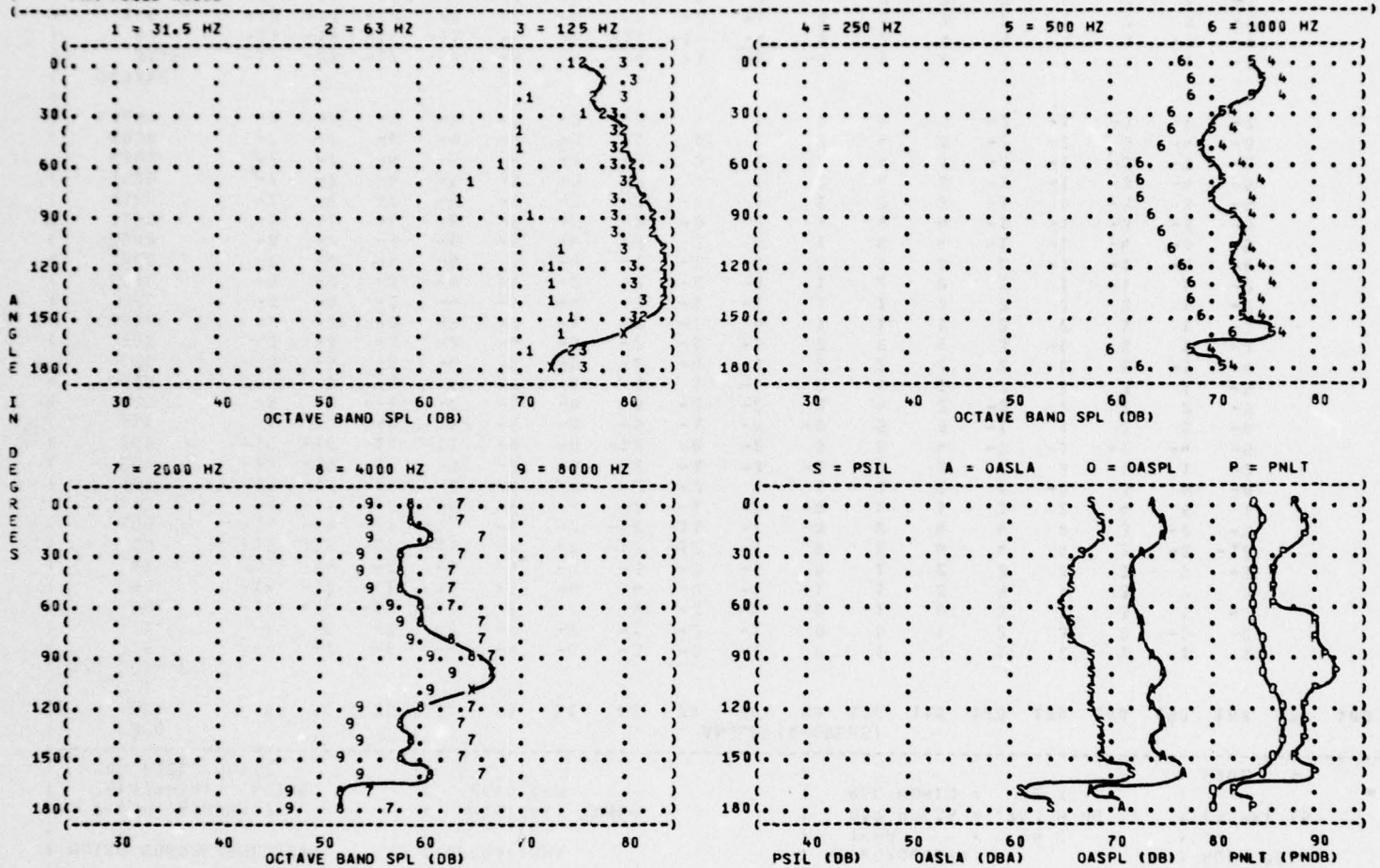


FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
PAGE 6

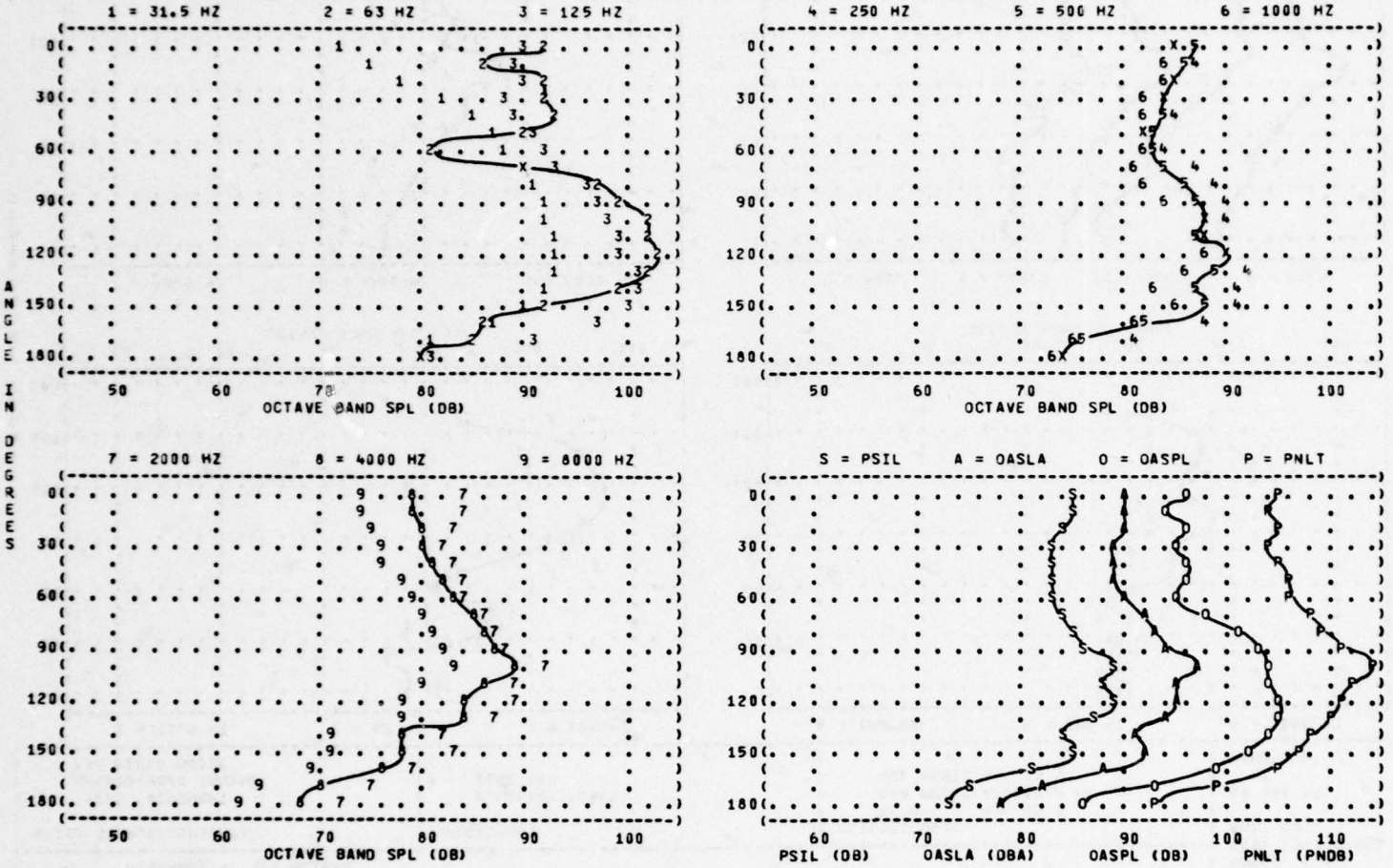


FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
PAGE 5

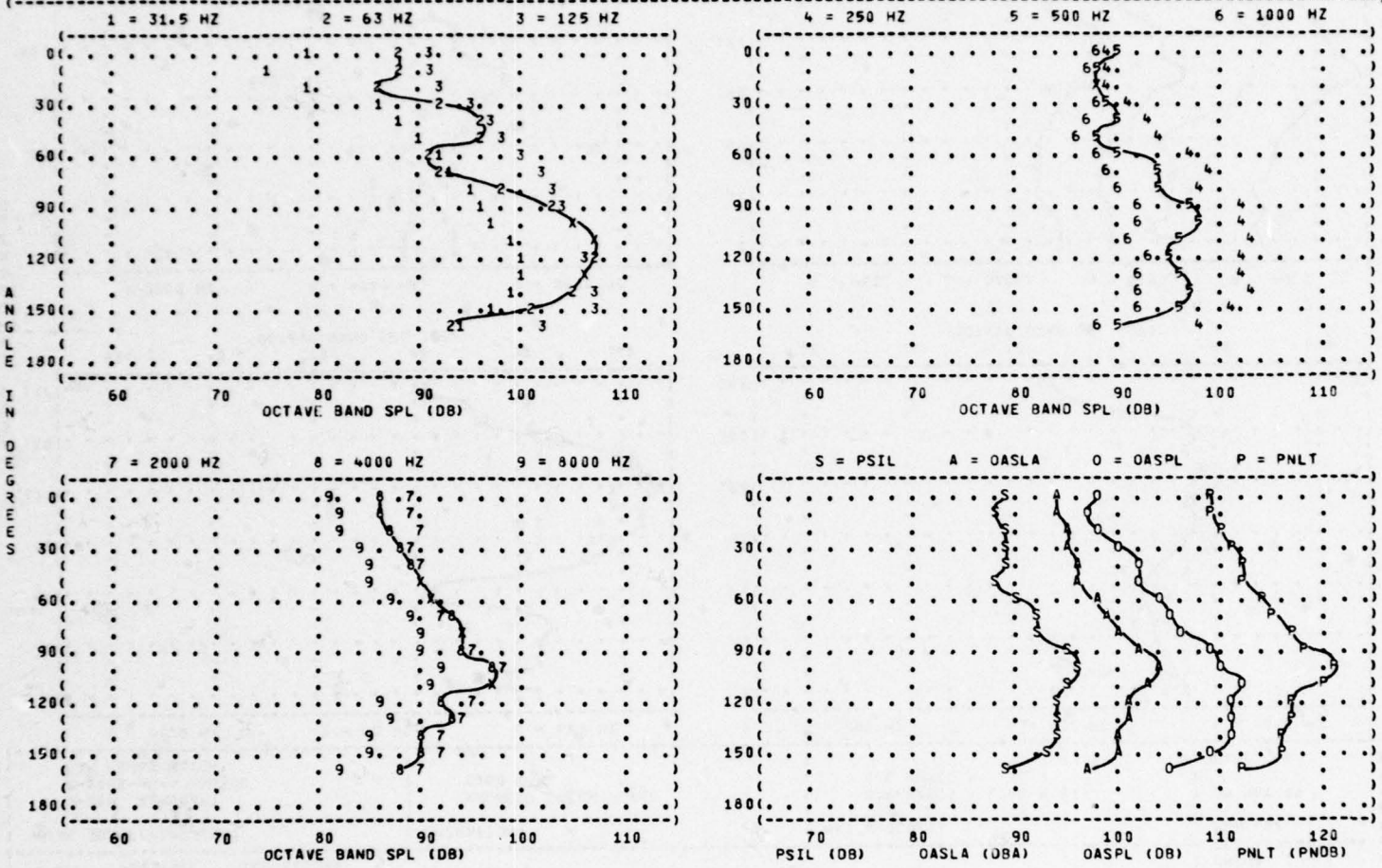


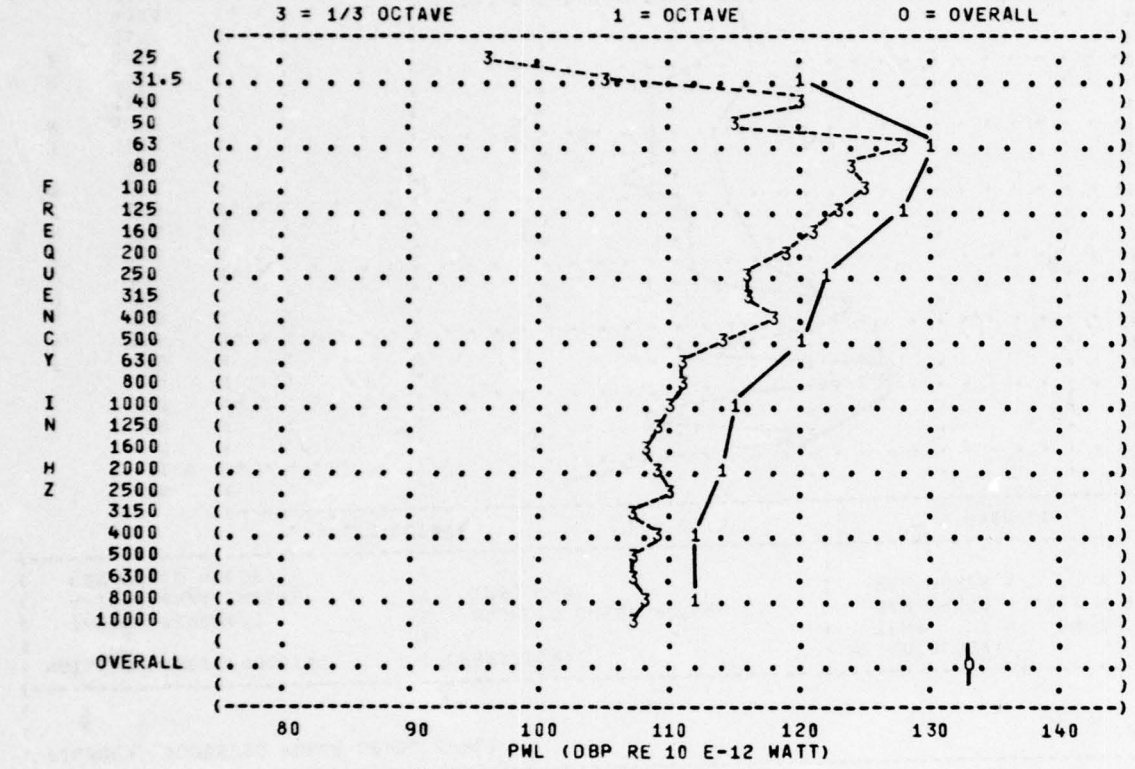
FIGURE: 4 ACOUSTIC POWER LEVEL (PWL)

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE/TAXI POWER
1200 RPM

METEOROLOGY:
TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 72 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 01
09 MAY 75
PAGE 3



	PWL 1/3 OCTAVE	PWL OCTAVE
25	95.7	
31.5	104.8	119.9
40	119.7	
50	115.2	
63	128.4	130.0
80	124.2	
100	124.7	
125	123.0	127.8
160	120.6	
200	119.0	
250	116.4	122.2
315	116.4	
400	117.8	
500	114.2	120.0
630	110.9	
800	111.2	
1000	109.5	114.7
1250	108.7	
1600	108.5	
2000	108.8	114.0
2500	110.2	
3150	106.6	
4000	108.7	112.3
5000	107.0	
6300	107.0	
8000	108.0	112.0
10000	106.7	
OVERALL	133.1	

FIGURE: ACOUSTIC POWER LEVEL (PWL)

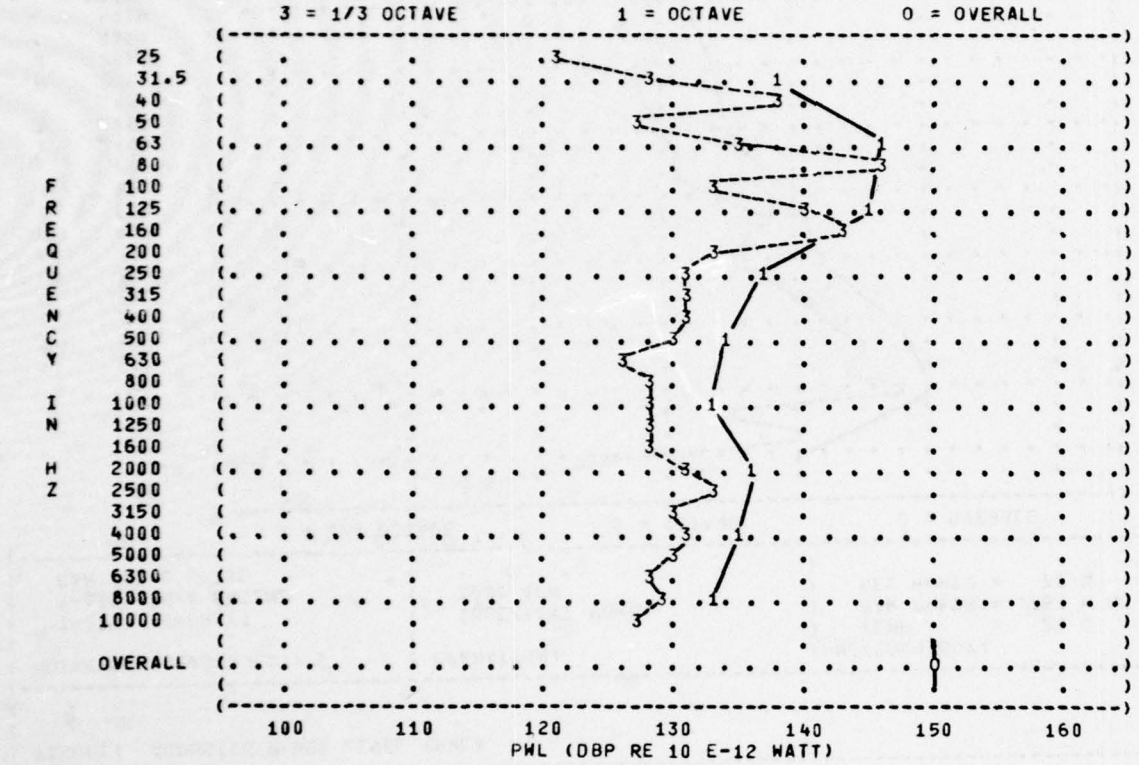
4

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 72 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
PAGE 3



	PWL 1/3 OCTAVE	PWL OCTAVE
25	121.4	
31.5	127.9	138.4
40	137.9	
50	127.2	
63	135.2	146.2
80	145.8	
100	132.9	
125	140.1	145.0
160	142.8	
200	132.9	
250	131.3	136.5
315	130.8	
400	131.2	
500	130.1	134.5
630	126.5	
800	128.2	
1000	128.4	133.0
1250	128.2	
1600	128.5	
2000	131.5	136.1
2500	132.9	
3150	129.8	
4000	130.6	134.8
5000	129.7	
6300	128.2	
8000	128.8	132.9
10000	127.1	
OVERALL		149.9

FIGURE: ACOUSTIC POWER LEVEL (PWL)

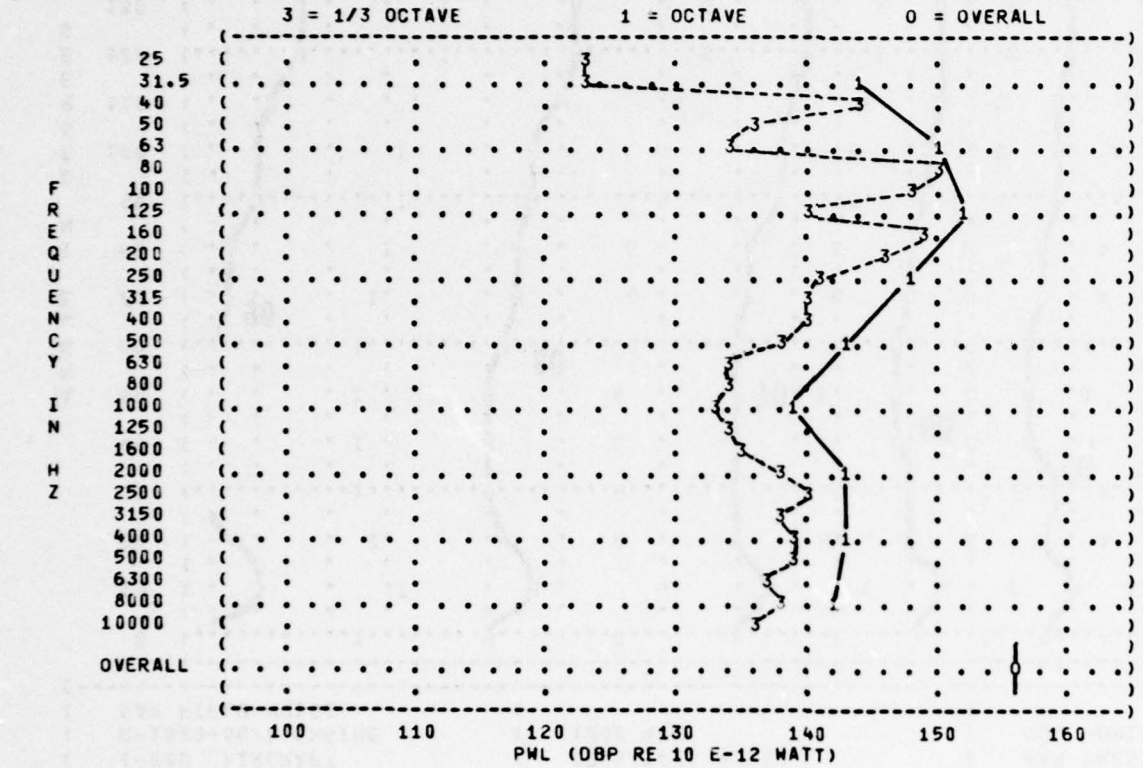
4

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 72 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
PAGE 3



PWL		
	1/3 OCTAVE	OCTAVE
	123.5	
	123.2	144.0
	143.9	
	136.3	
	134.3	150.4
	150.2	
	147.8	
	139.9	151.8
	149.1	
	146.3	
	141.3	148.2
	139.7	
	140.1	
	137.6	142.6
	133.6	
	134.3	
	133.2	138.8
	134.4	
	135.0	
	137.7	142.9
	140.3	
	138.2	
	138.8	143.3
	138.6	
	137.3	
	137.5	141.7
	135.9	
		156.4

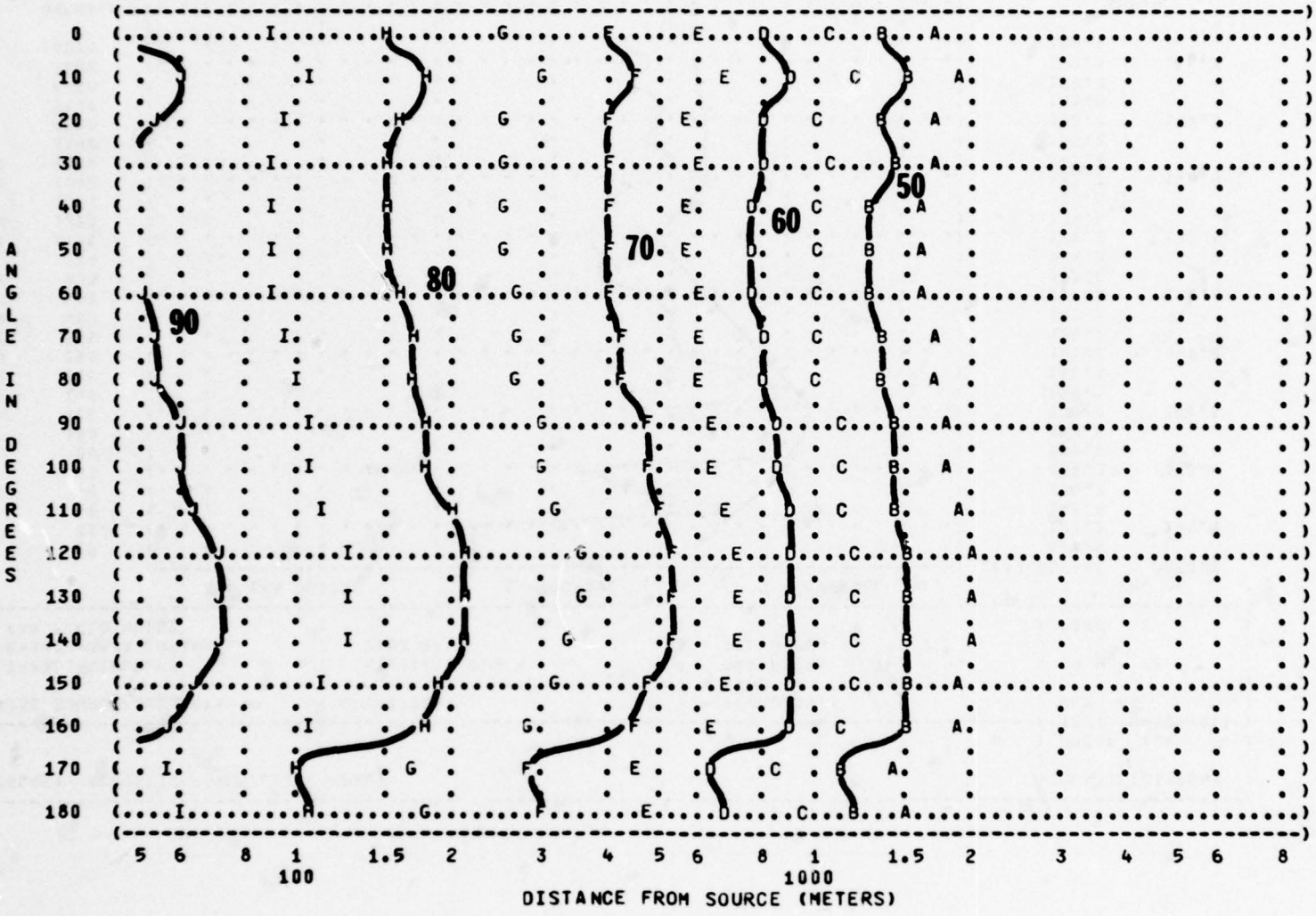
FIGURE 5 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE/TAXI POWER
1200 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 01
09 MAY 75
PAGE 13



POINT	DB
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90

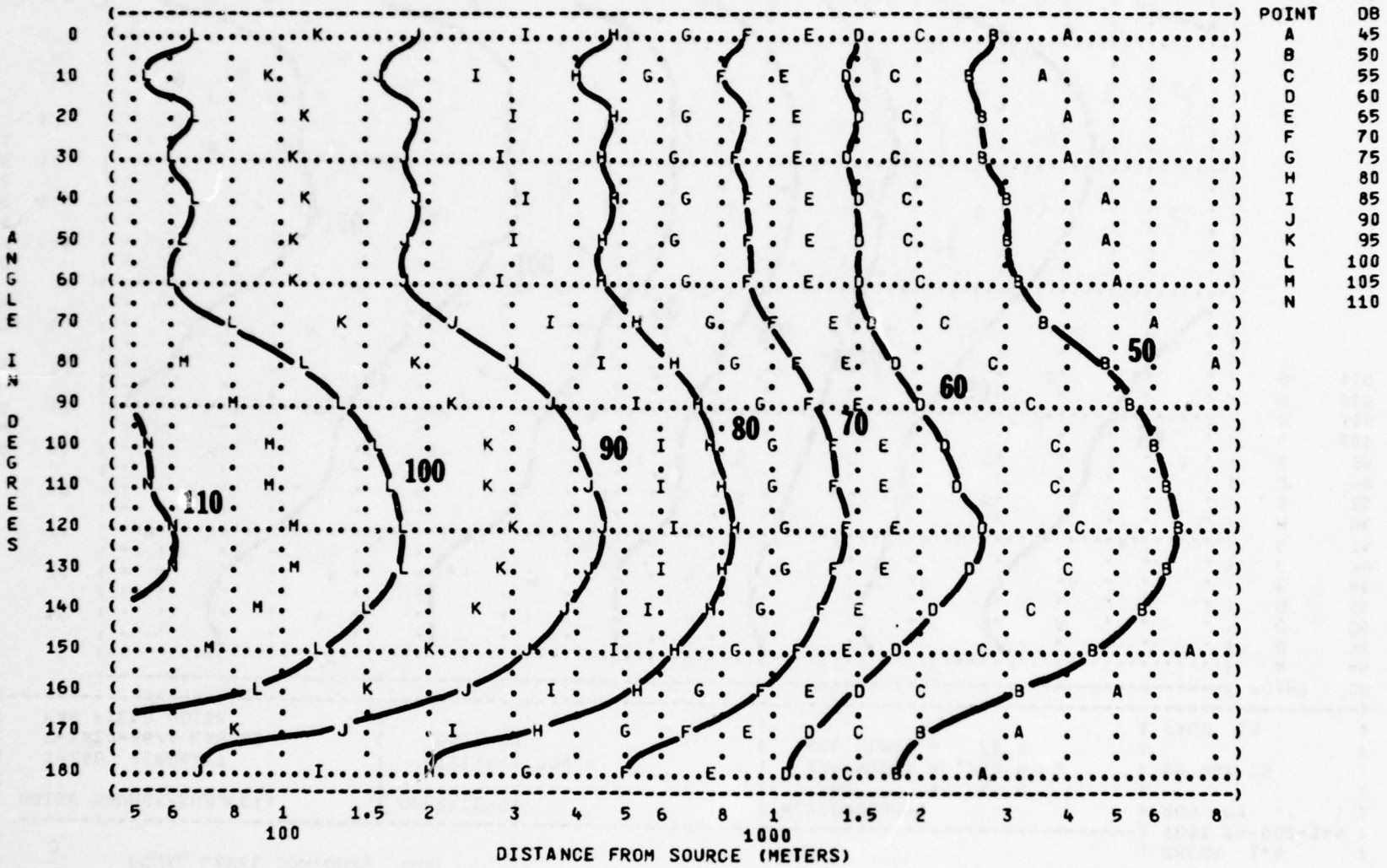
FIGURE: 5 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
PAGE 13



POINT	DB
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100
M	105
N	110

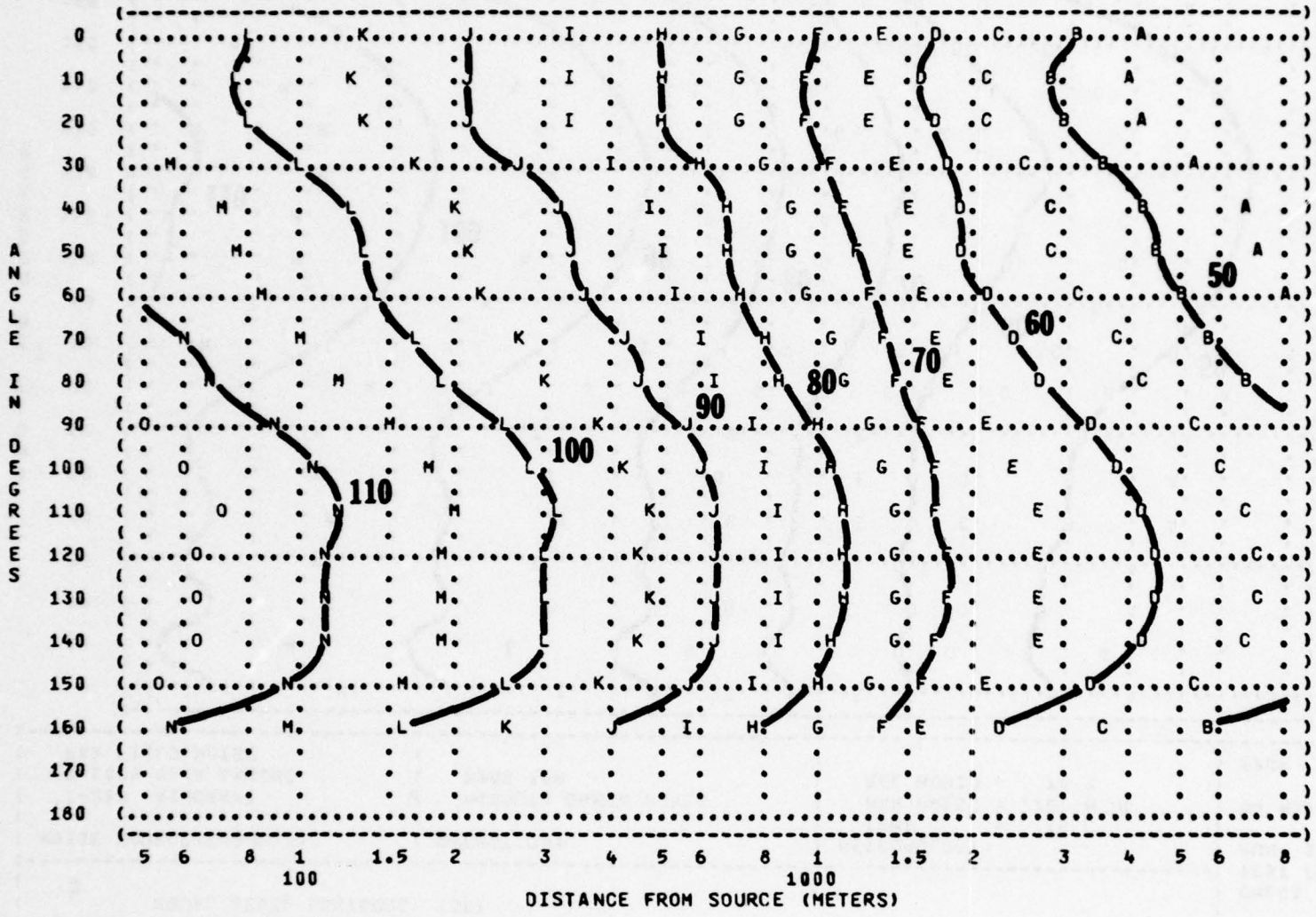
FIGURE 5 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
PAGE 13



POINT	DB
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100
M	105
N	110
O	115

FIGURE: 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 01
09 MAY 75
PAGE 14

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE/TAXI POWER
1200 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	DBC
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90

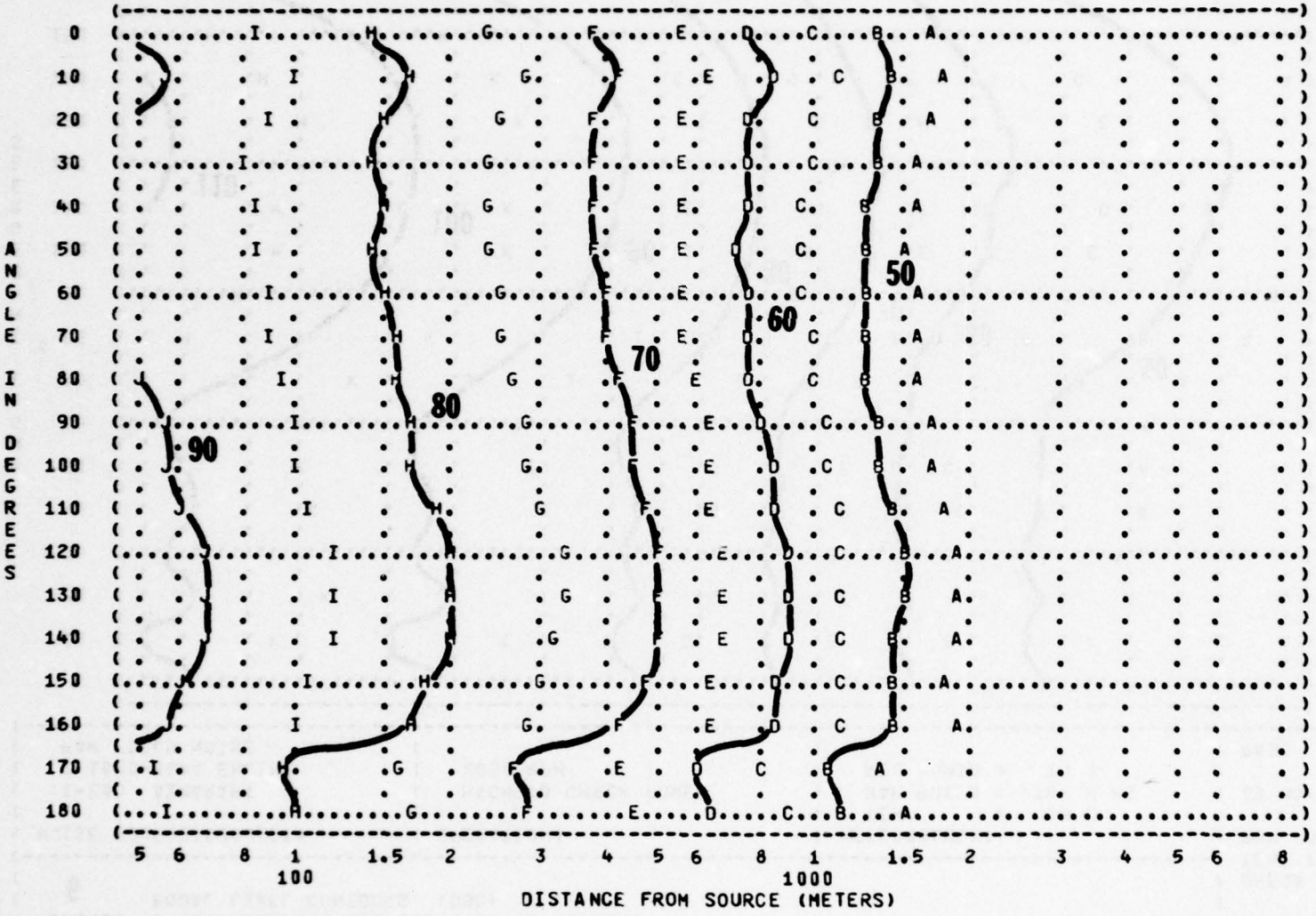


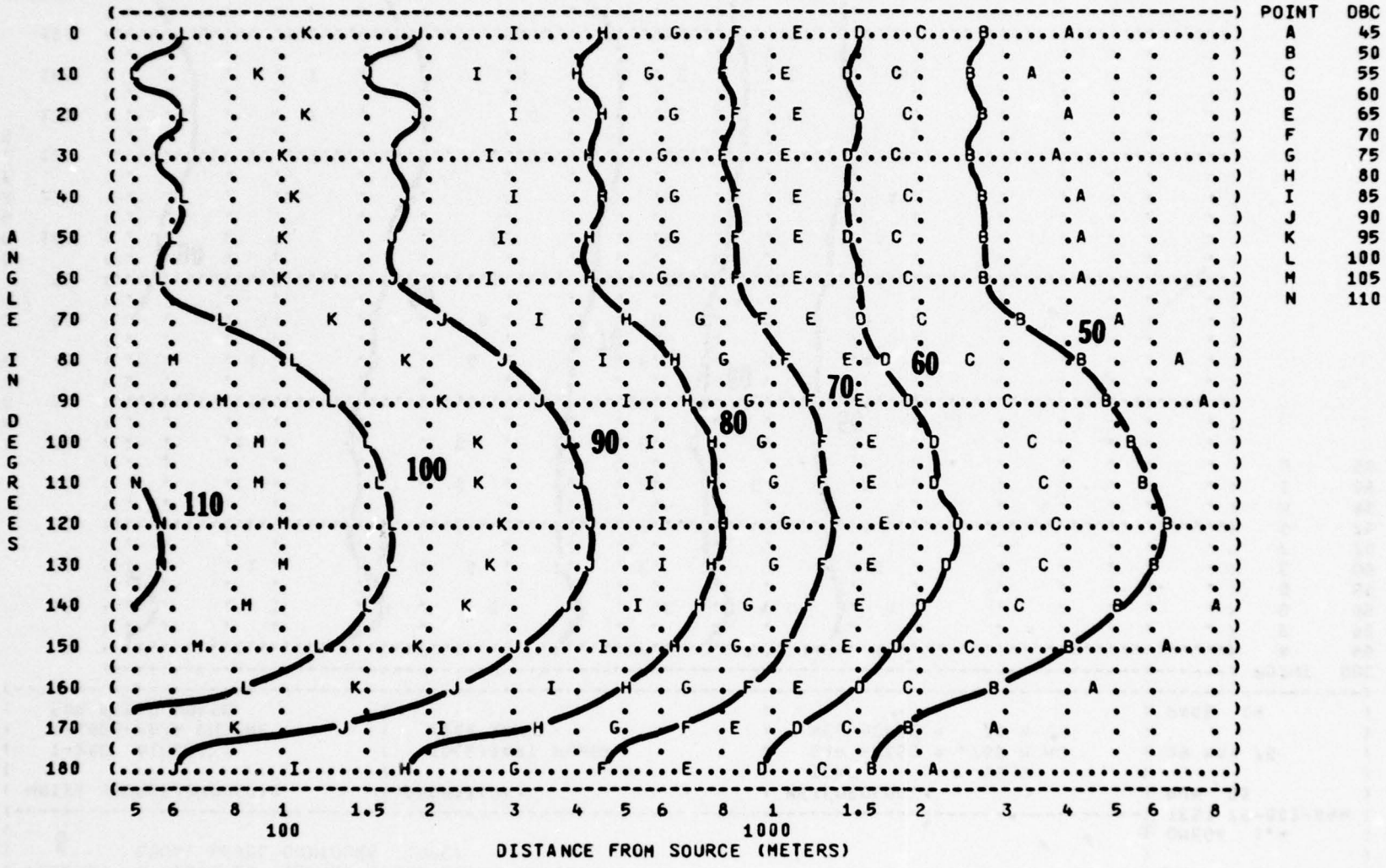
FIGURE 6: C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
PAGE 14

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	DBC
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100
M	105
N	110

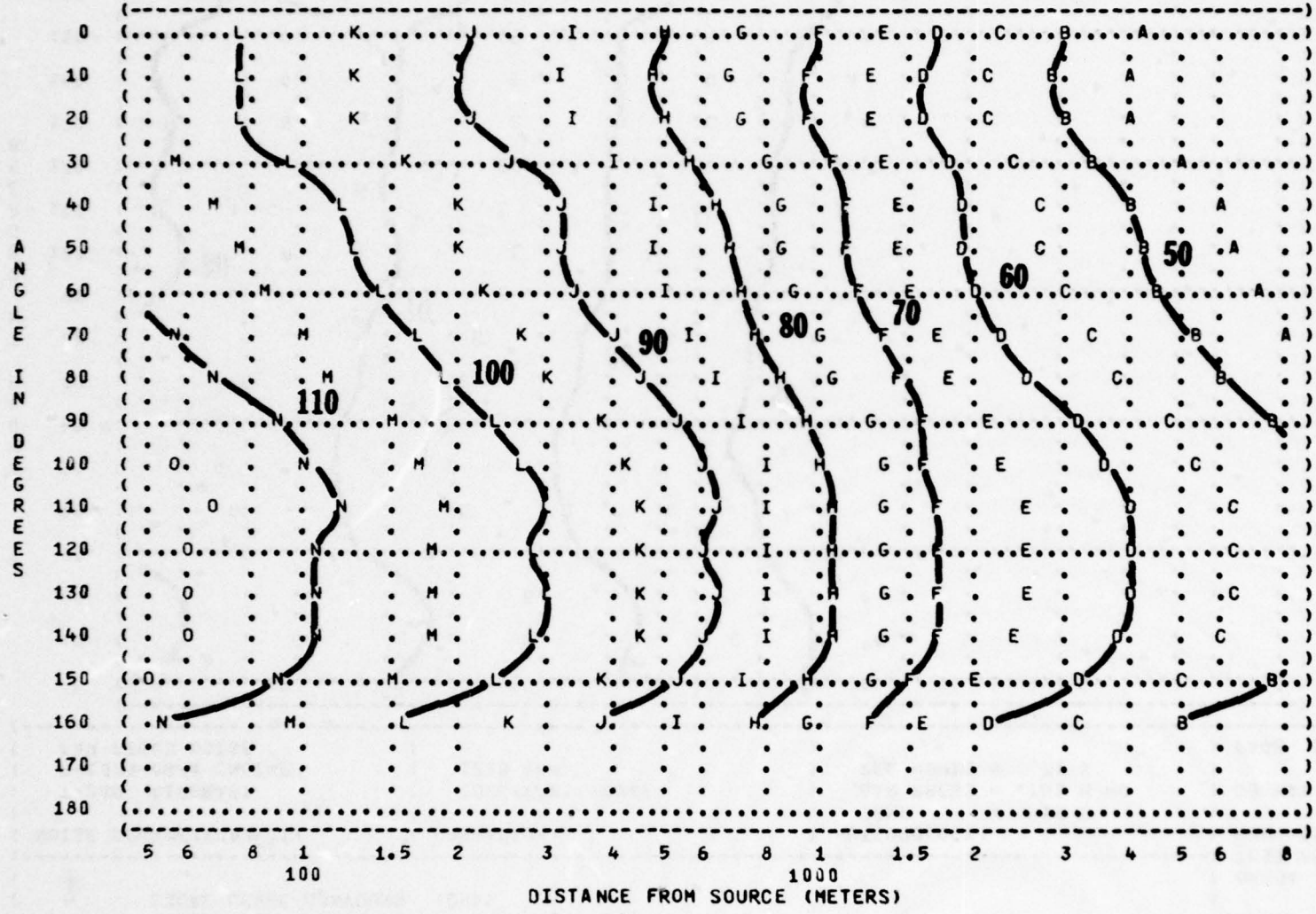
FIGURE 6: C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
PAGE 14



POINT	DBC
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100
M	105
N	110
O	115

FIGURE 7: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 01
09 MAY 75
PAGE 15

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE/TAXI POWER
1200 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

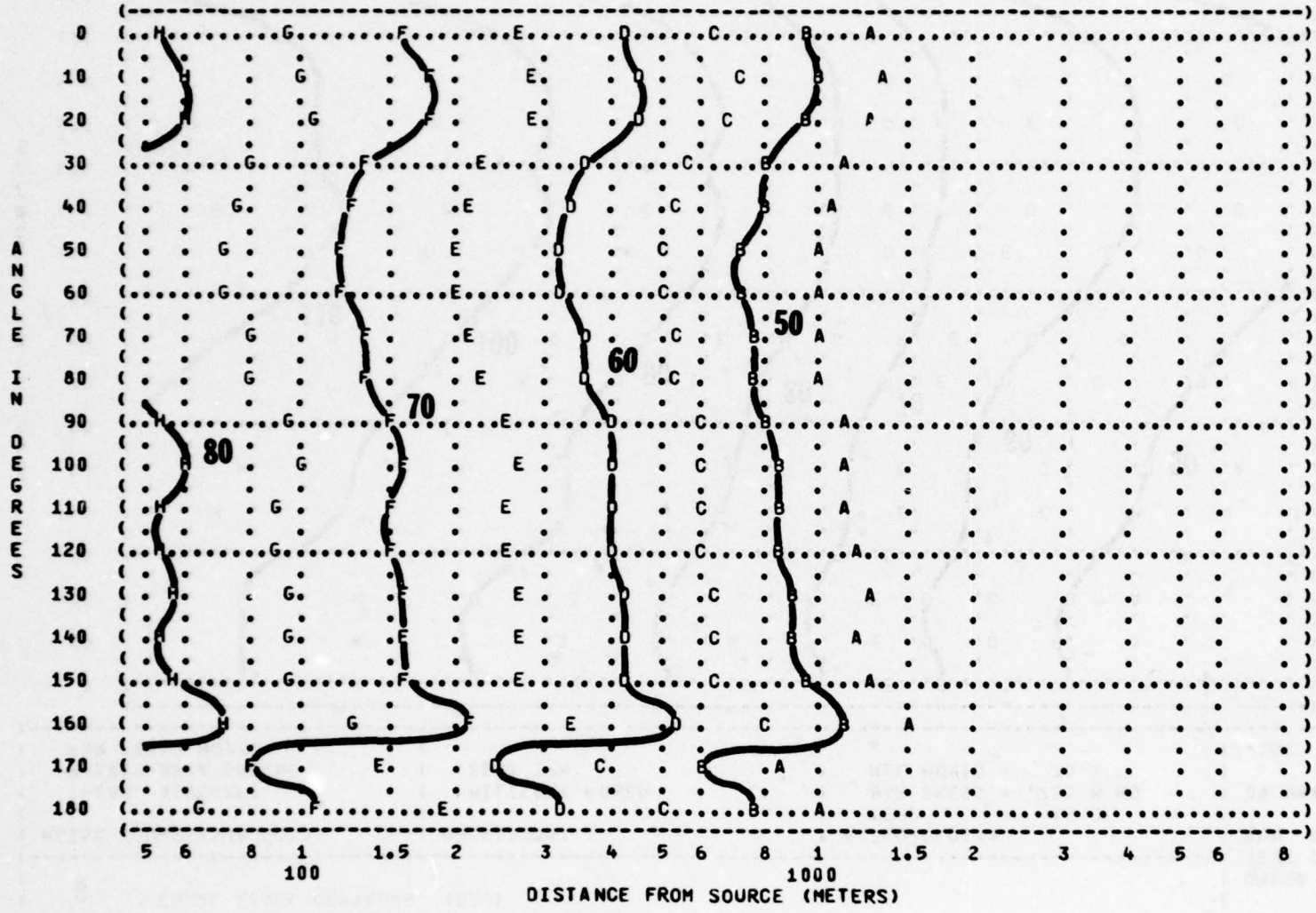


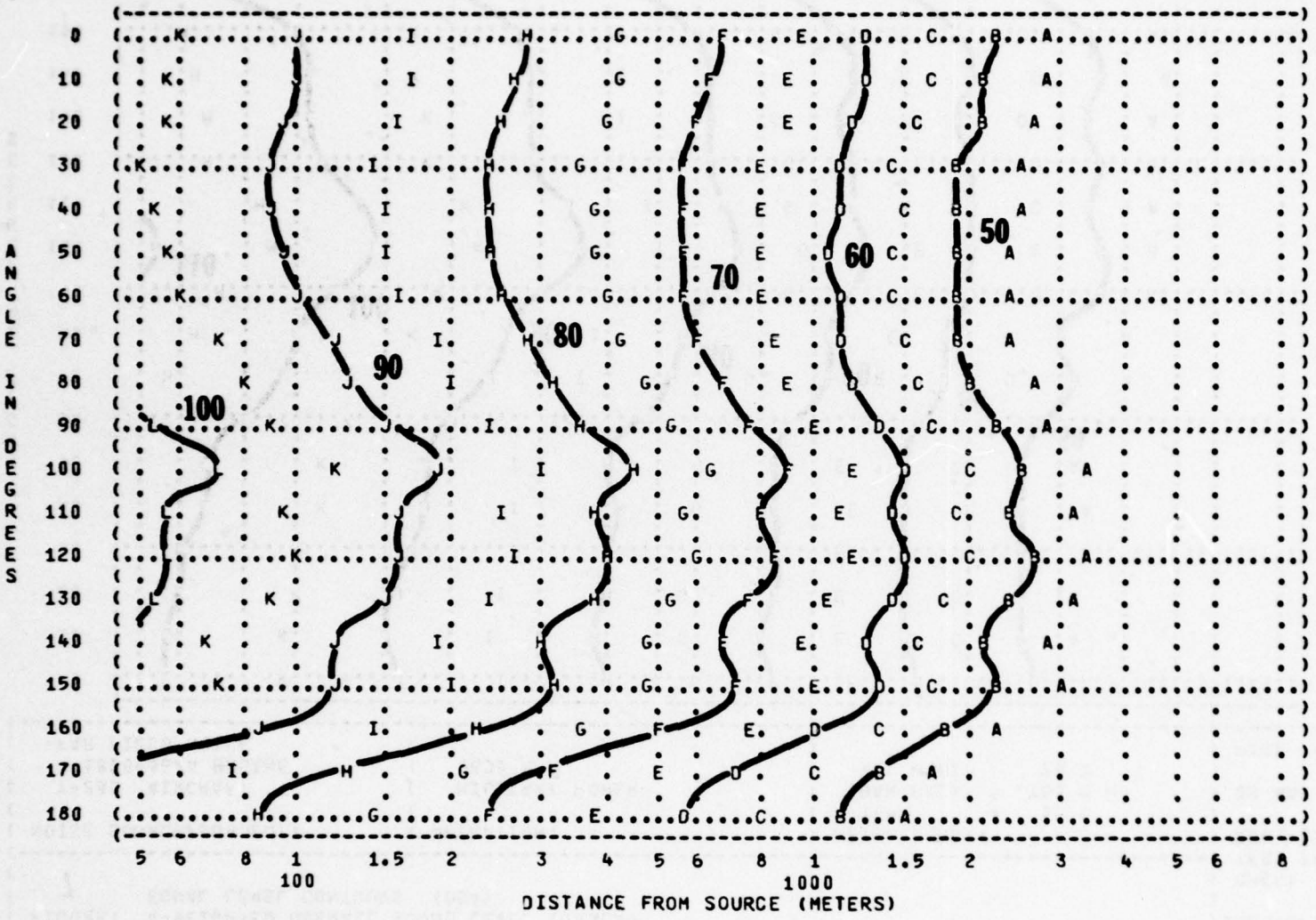
FIGURE 7: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
PAGE 15

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = .15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	DBA
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100

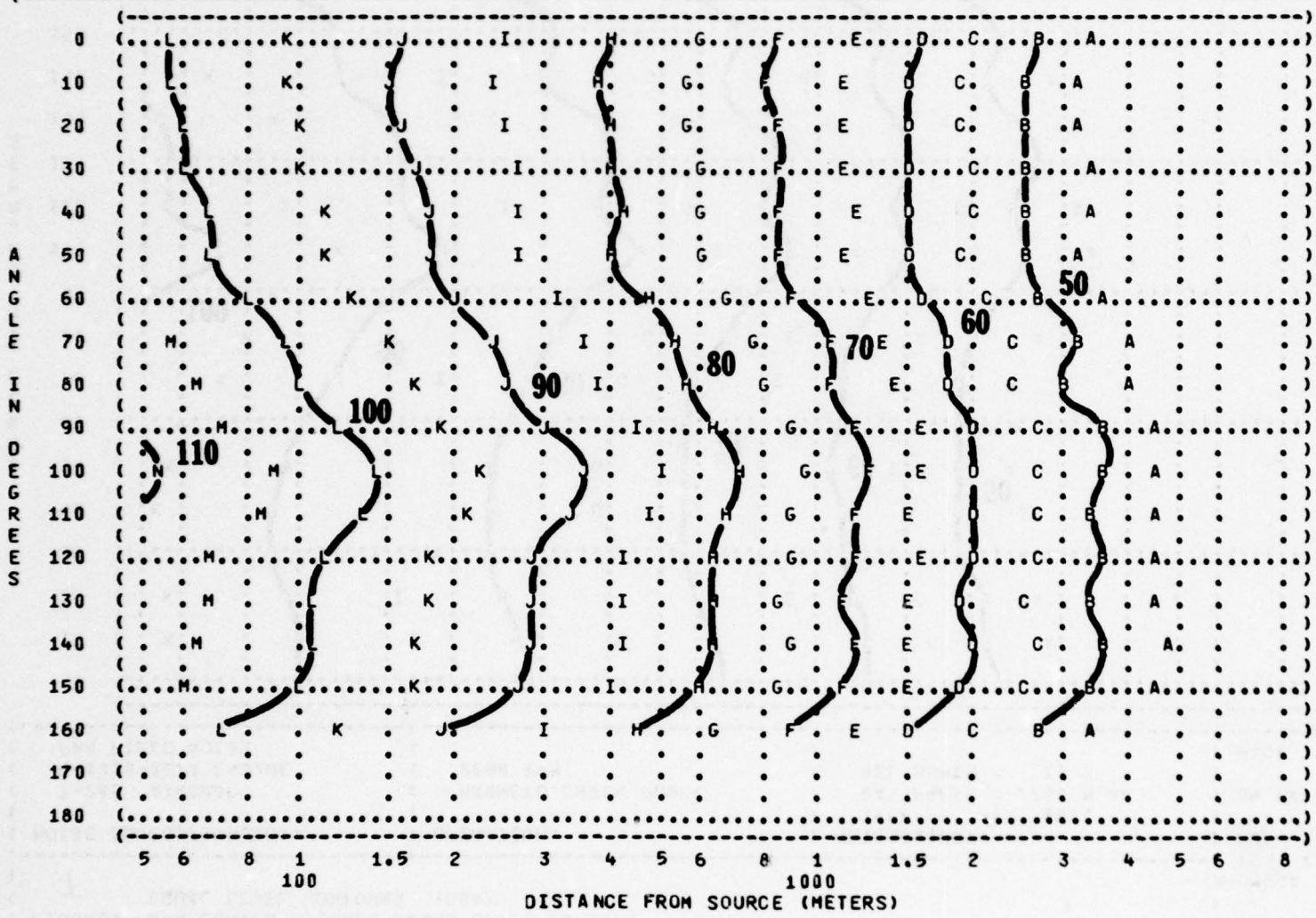
FIGURE 7: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
PAGE 15

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	DBA
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100
M	105
N	110

FIGURE 8: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT) EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 01
09 MAY 75
PAGE 16

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE/TAXI POWER
1200 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	PNDB
A	60
B	65
C	70
D	75
E	80
F	85
G	90
H	95

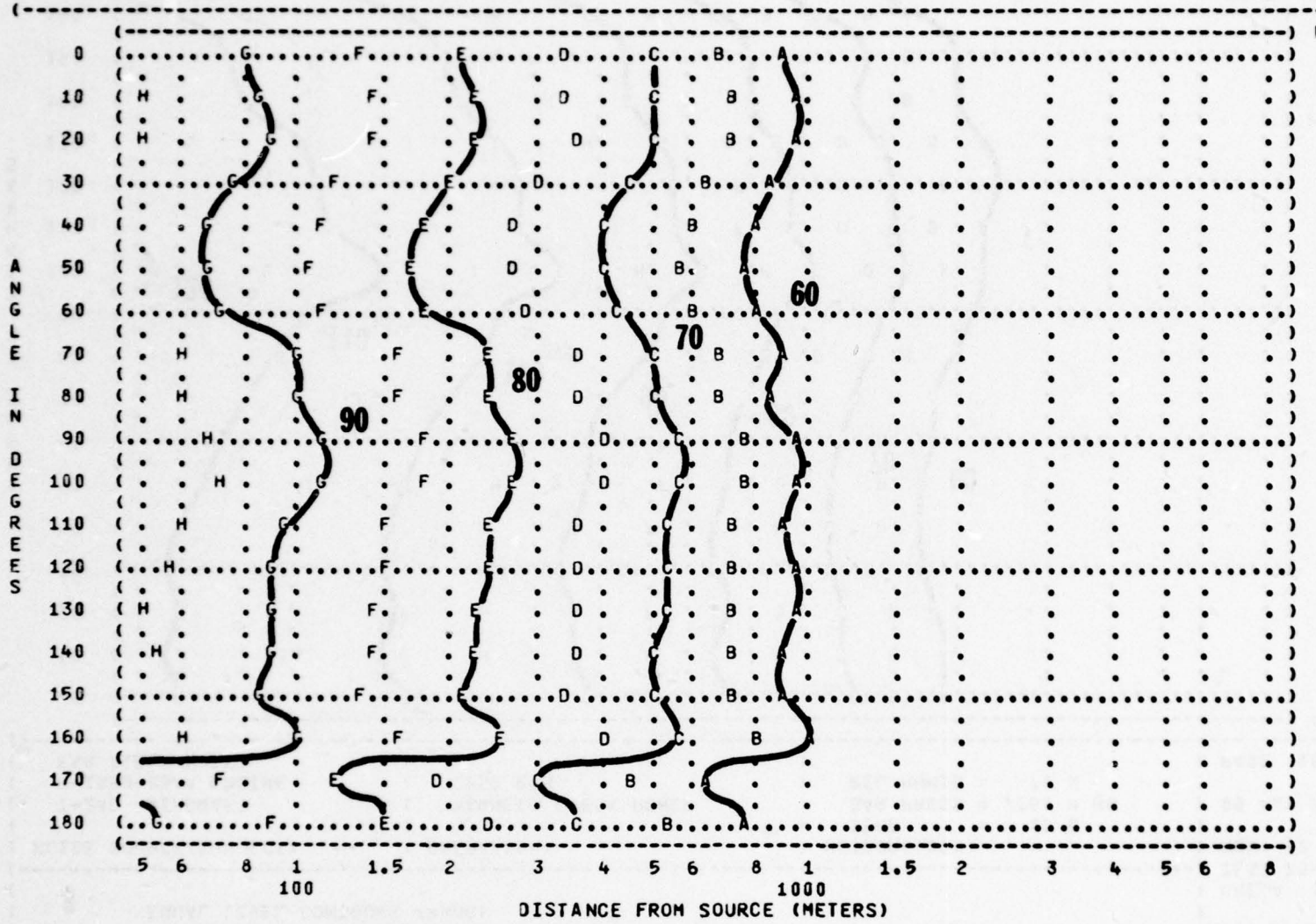


FIGURE 8 PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
EQUAL LEVEL CONTOURS (PNOB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
PAGE 16

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	PNOB
A	60
B	65
C	70
D	75
E	80
F	85
G	90
H	95
I	100
J	105
K	110
L	115
M	120

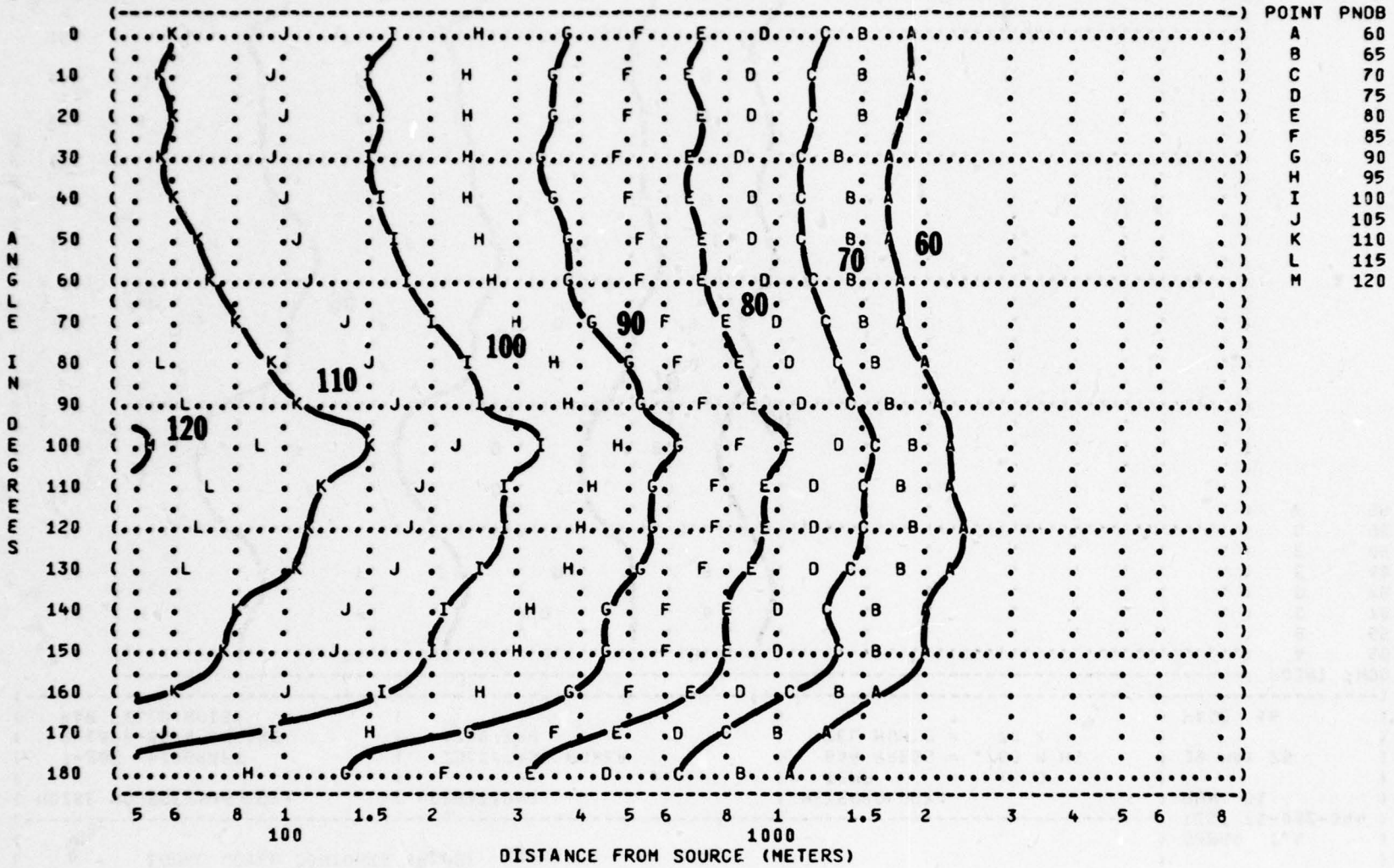


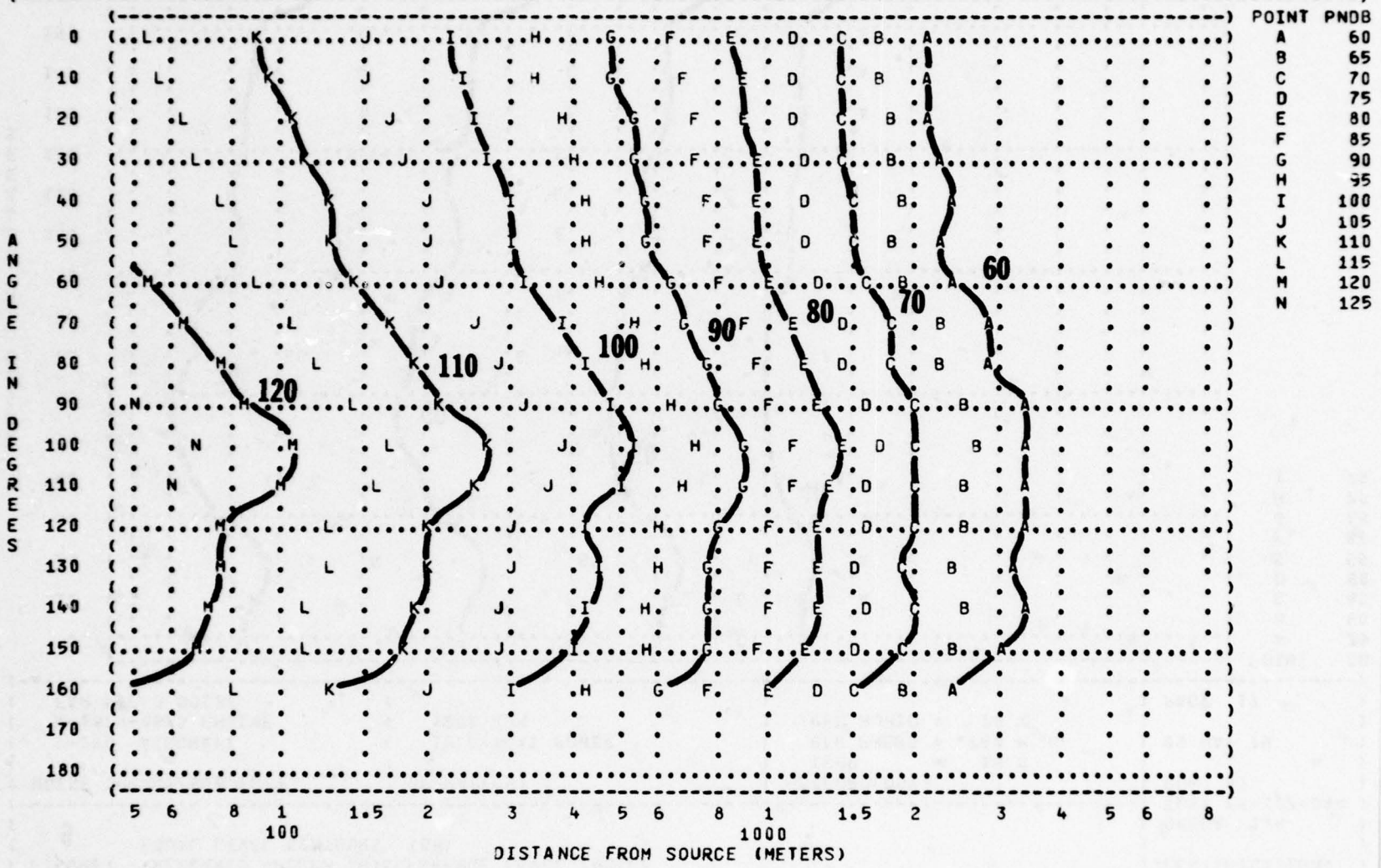
FIGURE 8 PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
PAGE 16

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	PNDB
A	60
B	65
C	70
D	75
E	80
F	85
G	90
H	95
I	100
J	105
K	110
L	115
M	120
N	125

FIGURE 9 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE/TAXI POWER
1200 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 01
09 MAY 75
PAGE 17

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75

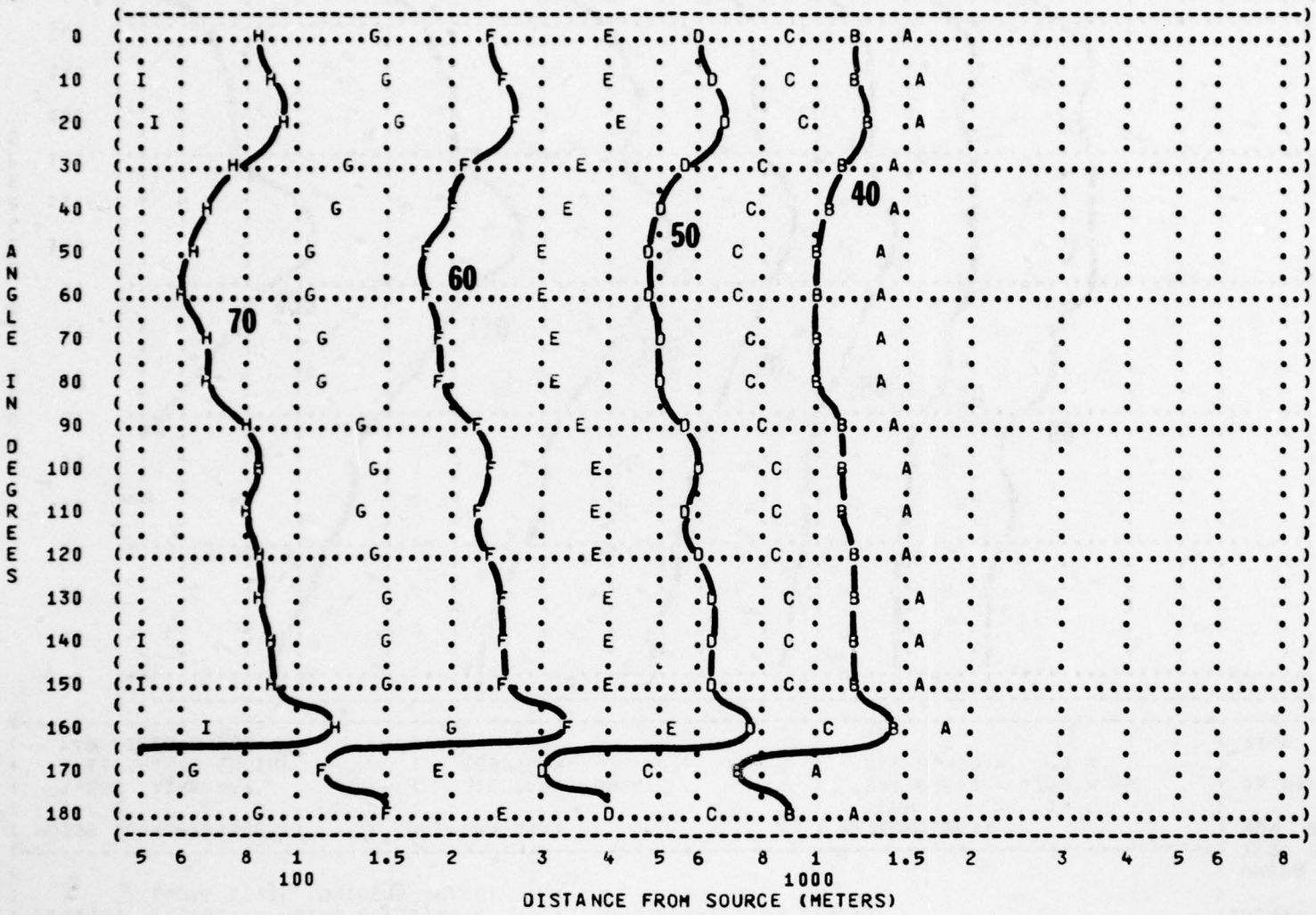


FIGURE 9 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
PAGE 17

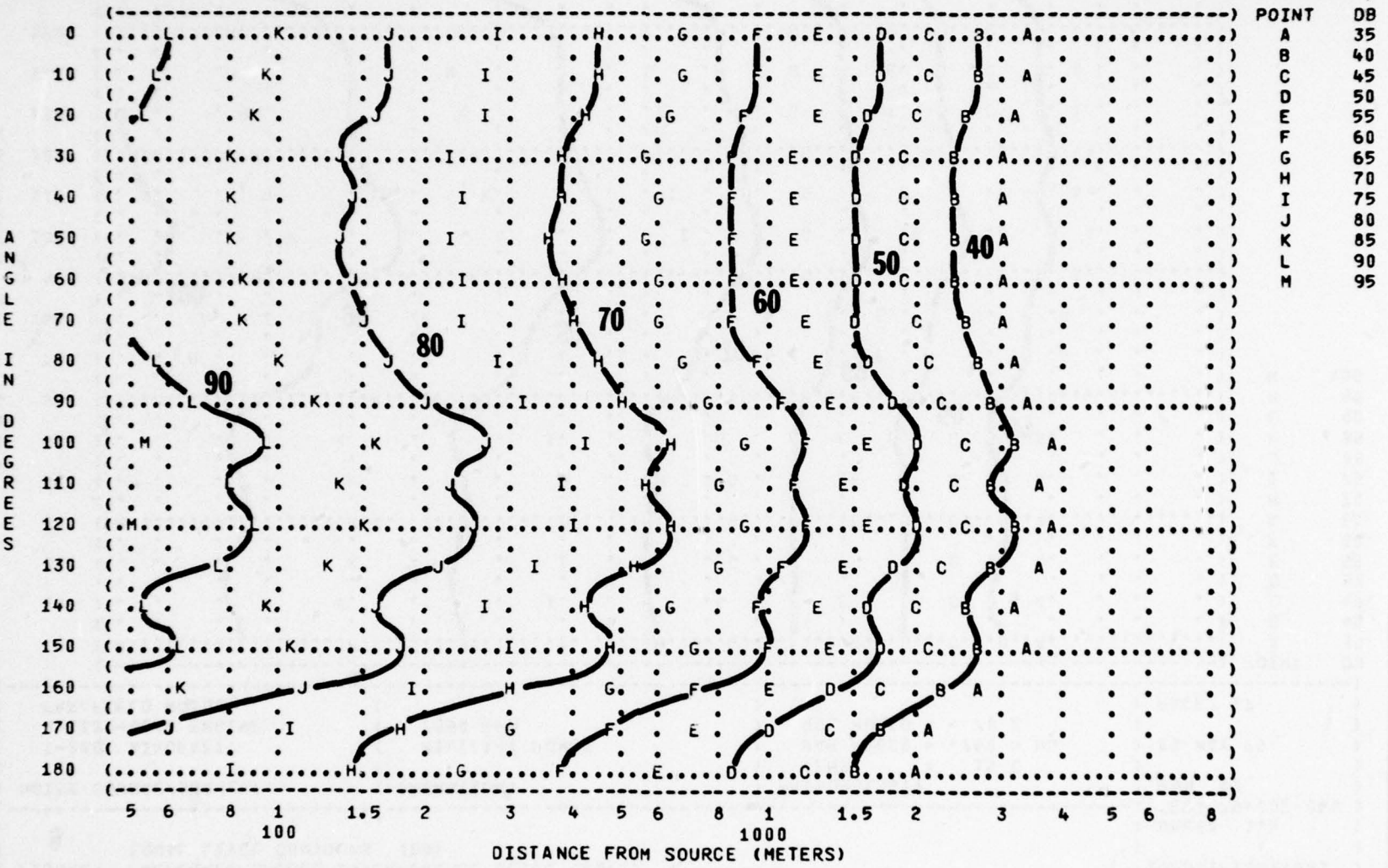


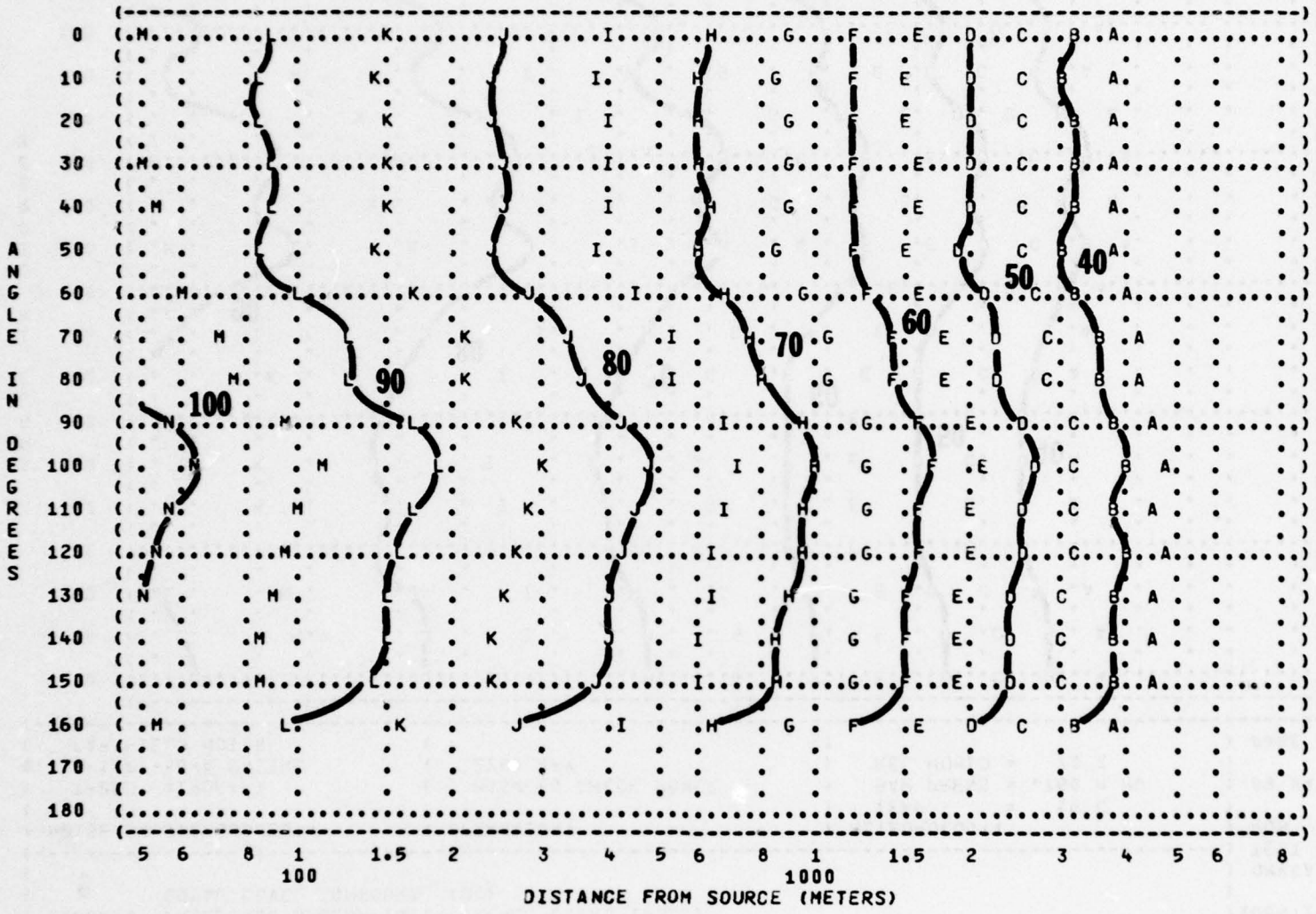
FIGURE 9: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
PAGE 17

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100

FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 01
09 MAY 75
PAGE 7

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE/TAXI POWER
1200 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	MIN
A	960

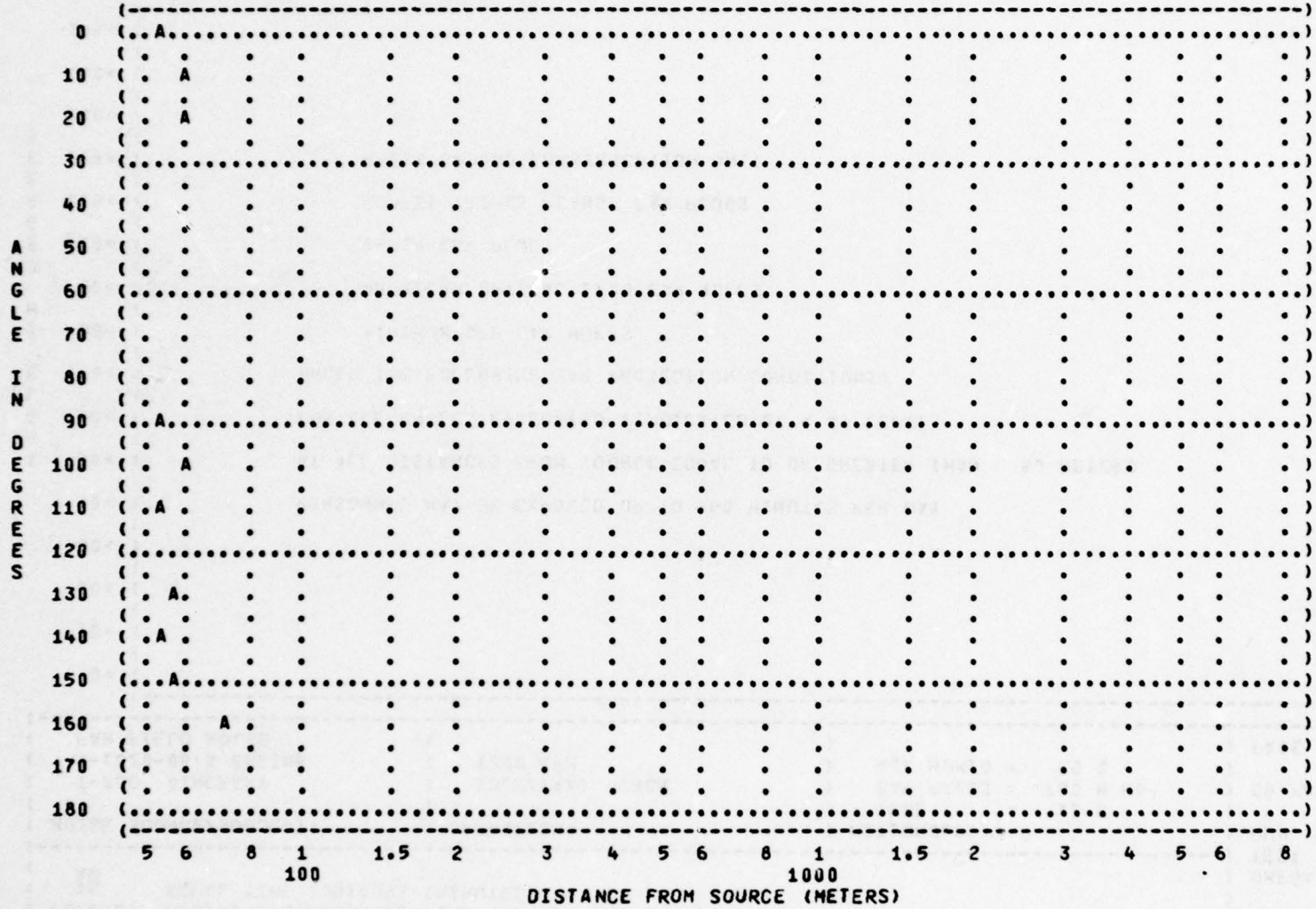


FIGURE: 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 01
09 MAY 75
PAGE 8

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE/TAXI POWER
1200 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

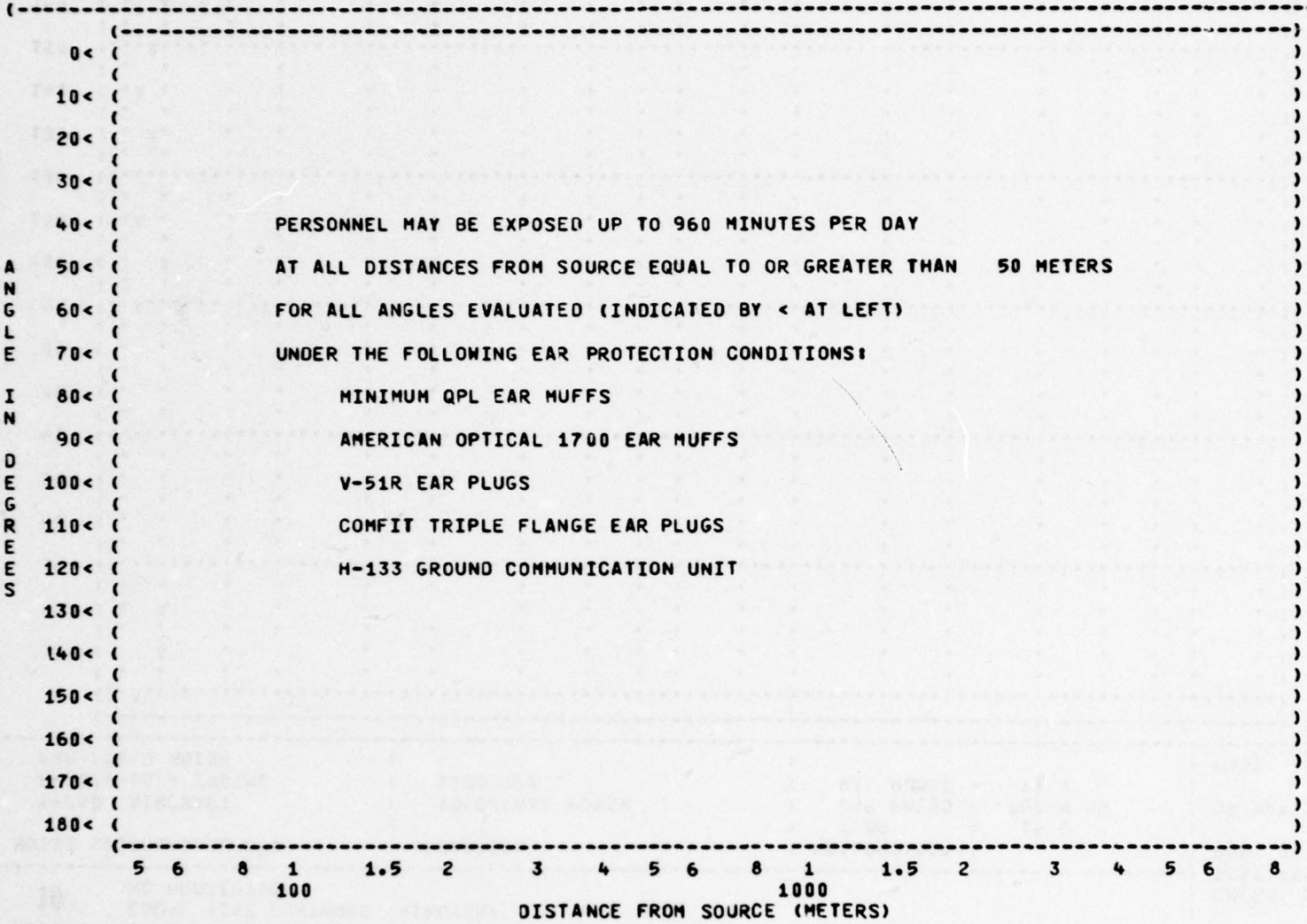


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
PAGE 7

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	MIN
A	960
B	480
C	240
D	120
E	60
F	30

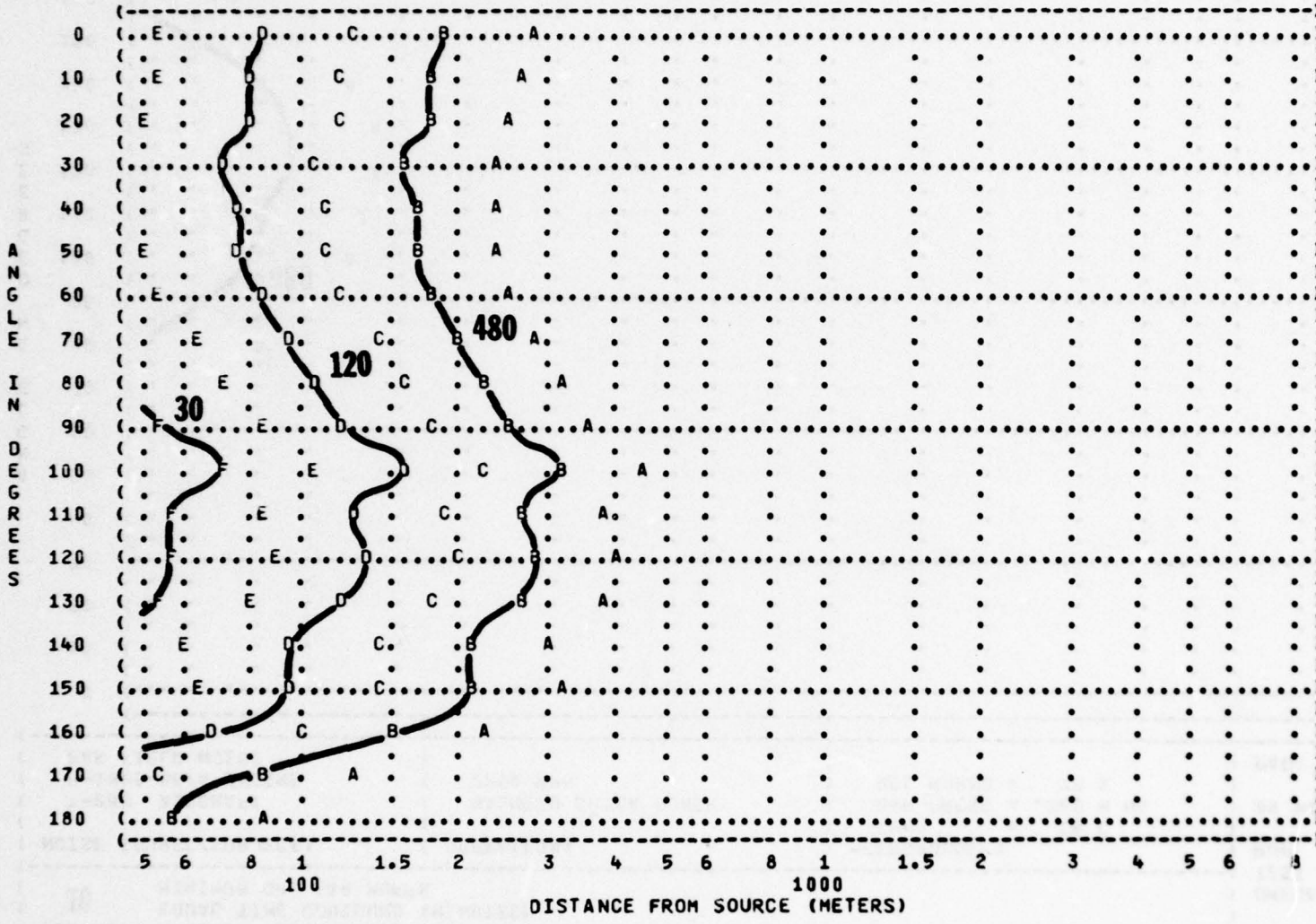


FIGURE: 10

MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
MINIMUM QPL EAR MUFFS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
PAGE 8

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

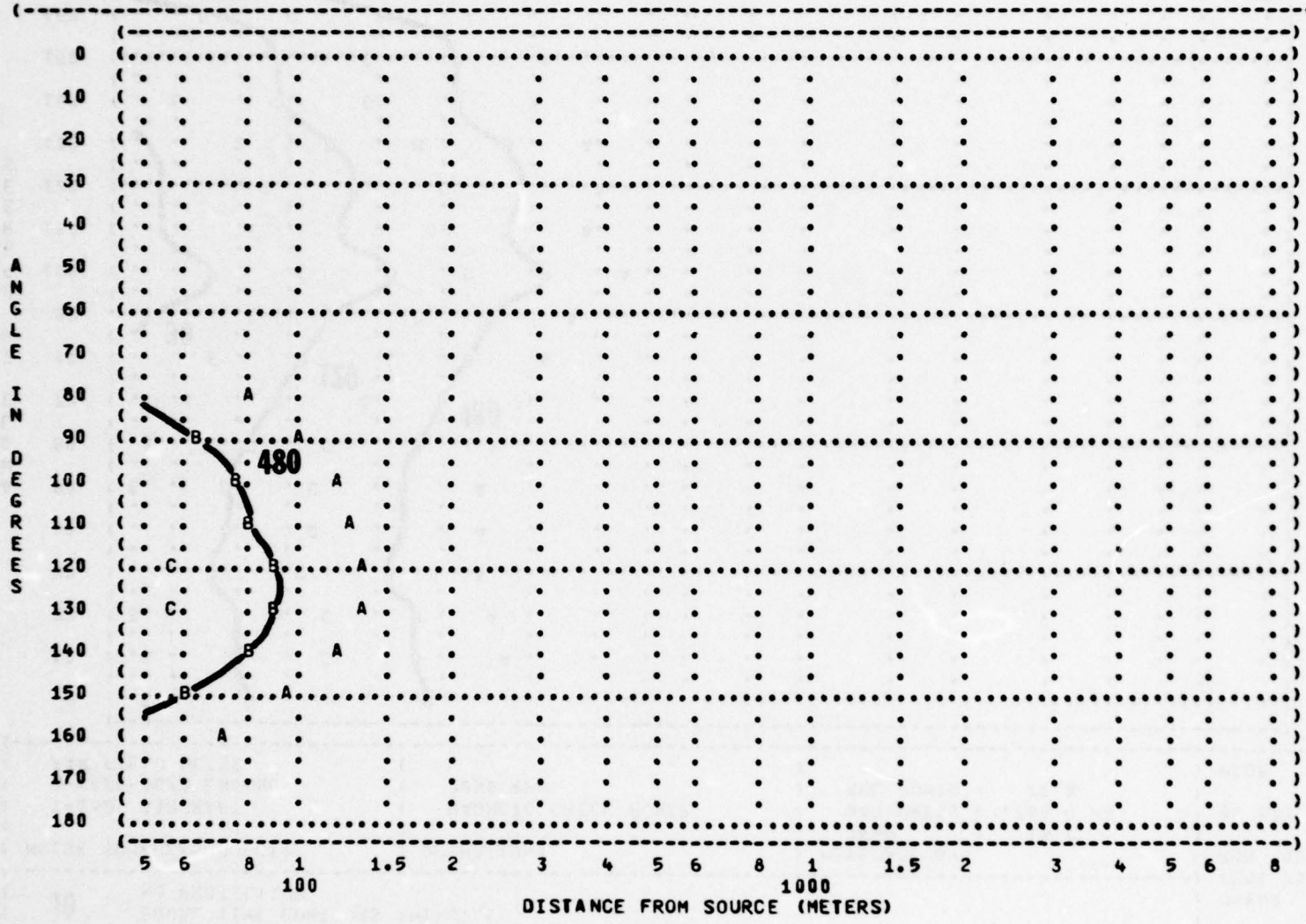


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
AMERICAN OPTICAL 1700 EAR MUFFS

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
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POINT	MIN
A	960
B	480

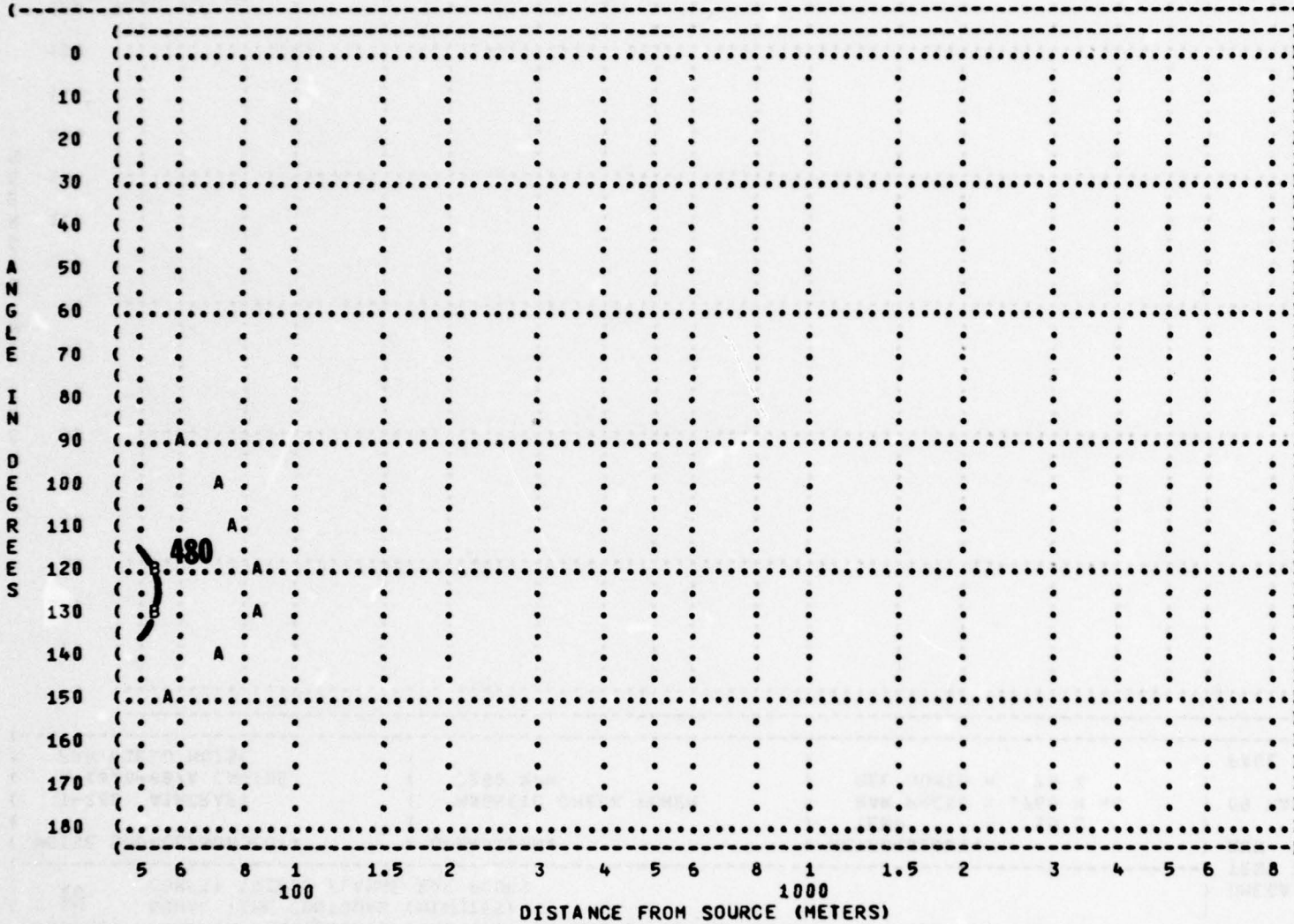

FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
COMFIT TRIPLE FLANGE EAR PLUGS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
PAGE 10

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	MIN
A	960

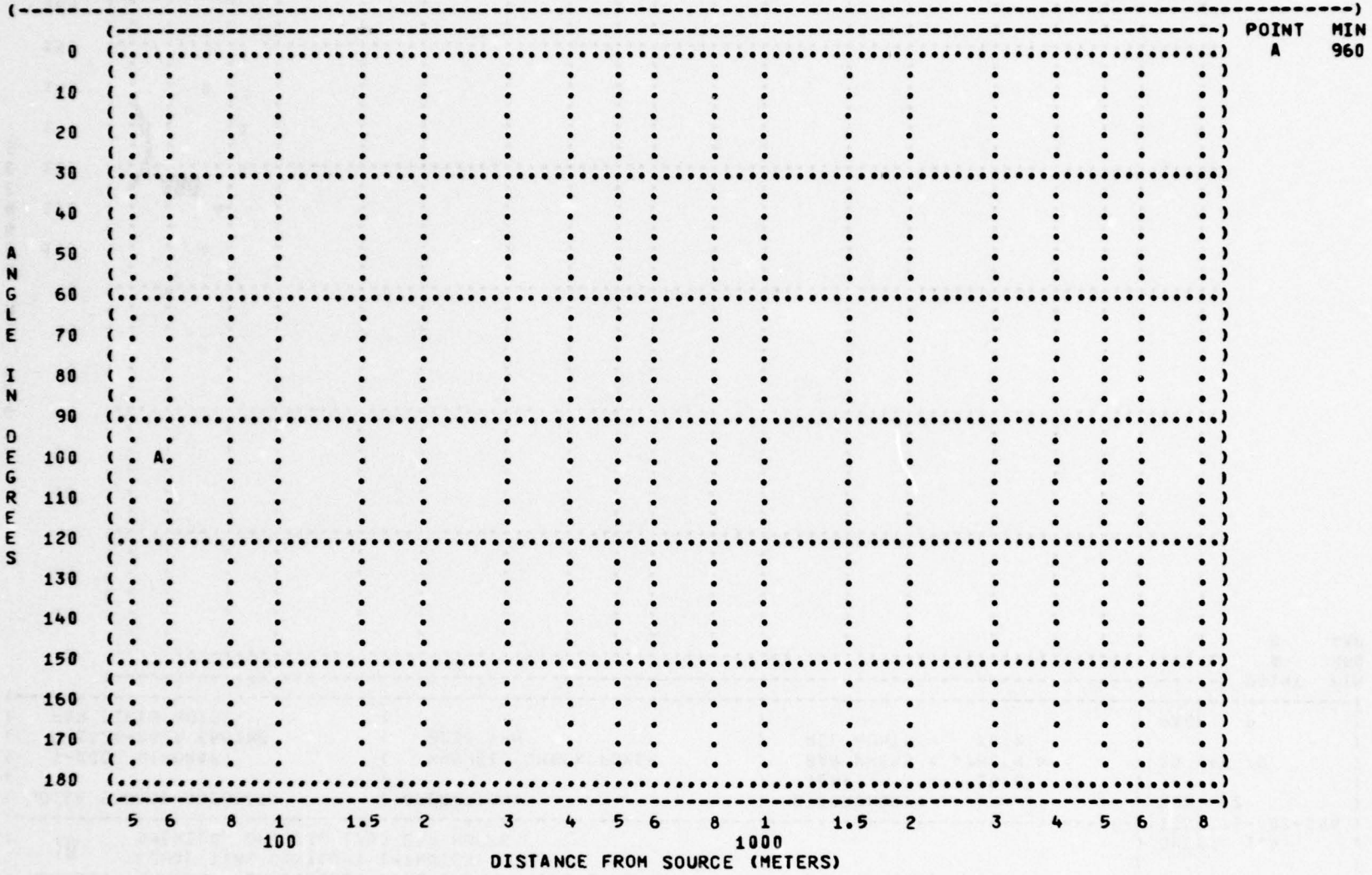

FIGURE: 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
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09 MAY 75
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NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

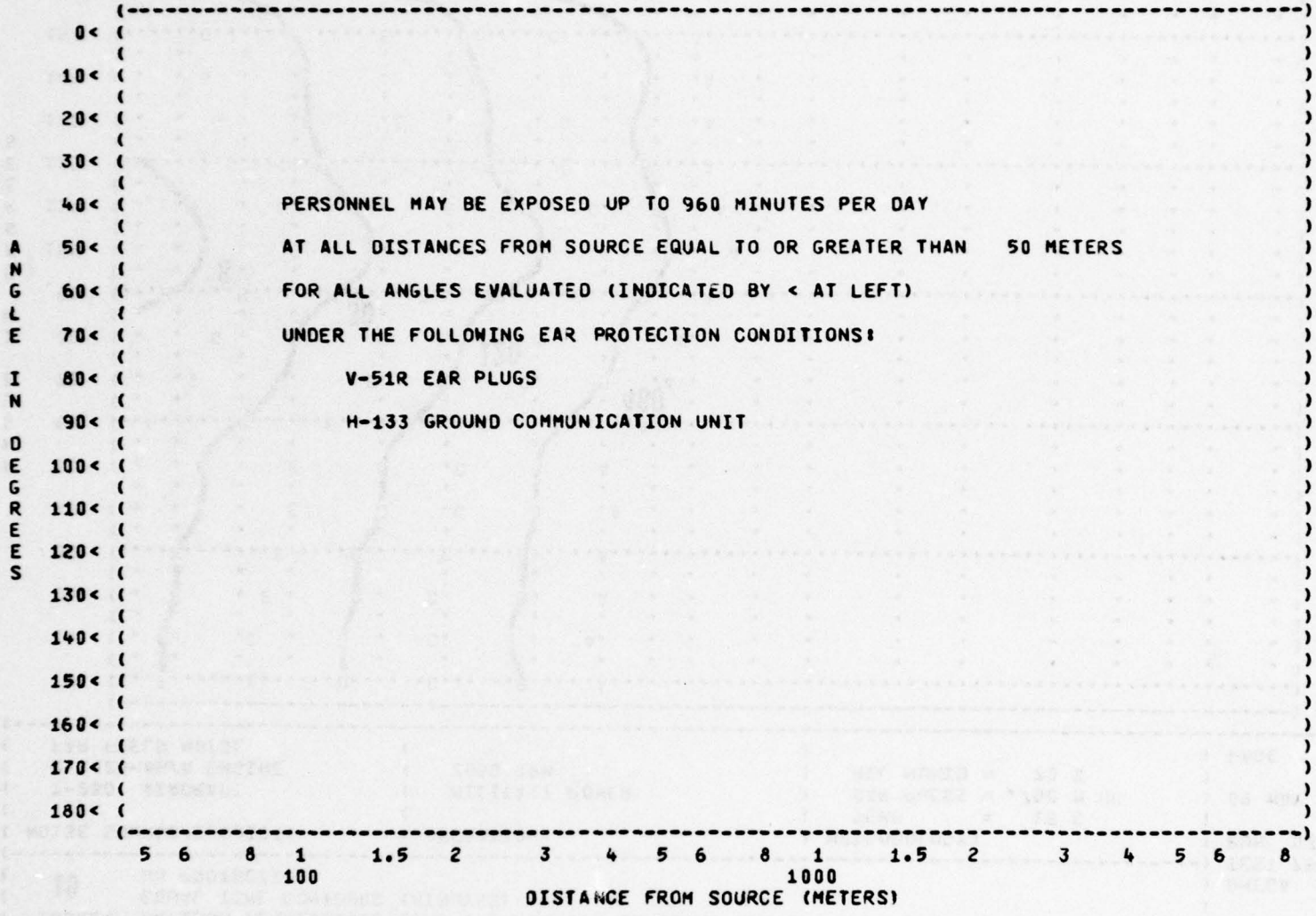

FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
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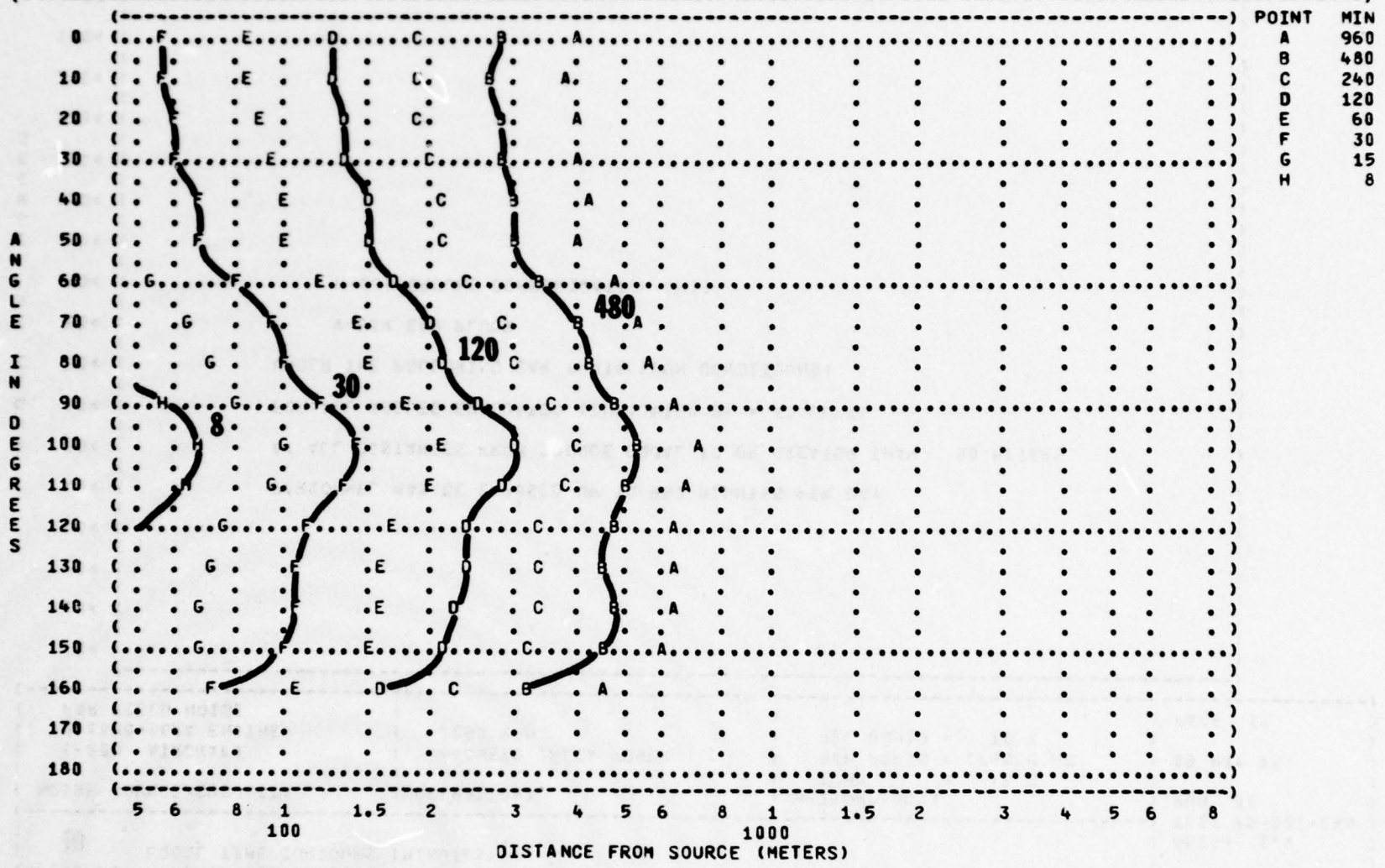
NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	MIN
A	960
B	480
C	240
D	120
E	60
F	30
G	15
H	8

FIGURE: 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
MINIMUM QPL EAR MUFFS

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
PAGE 8

POINT	MIN
A	960
B	480
C	240
D	120

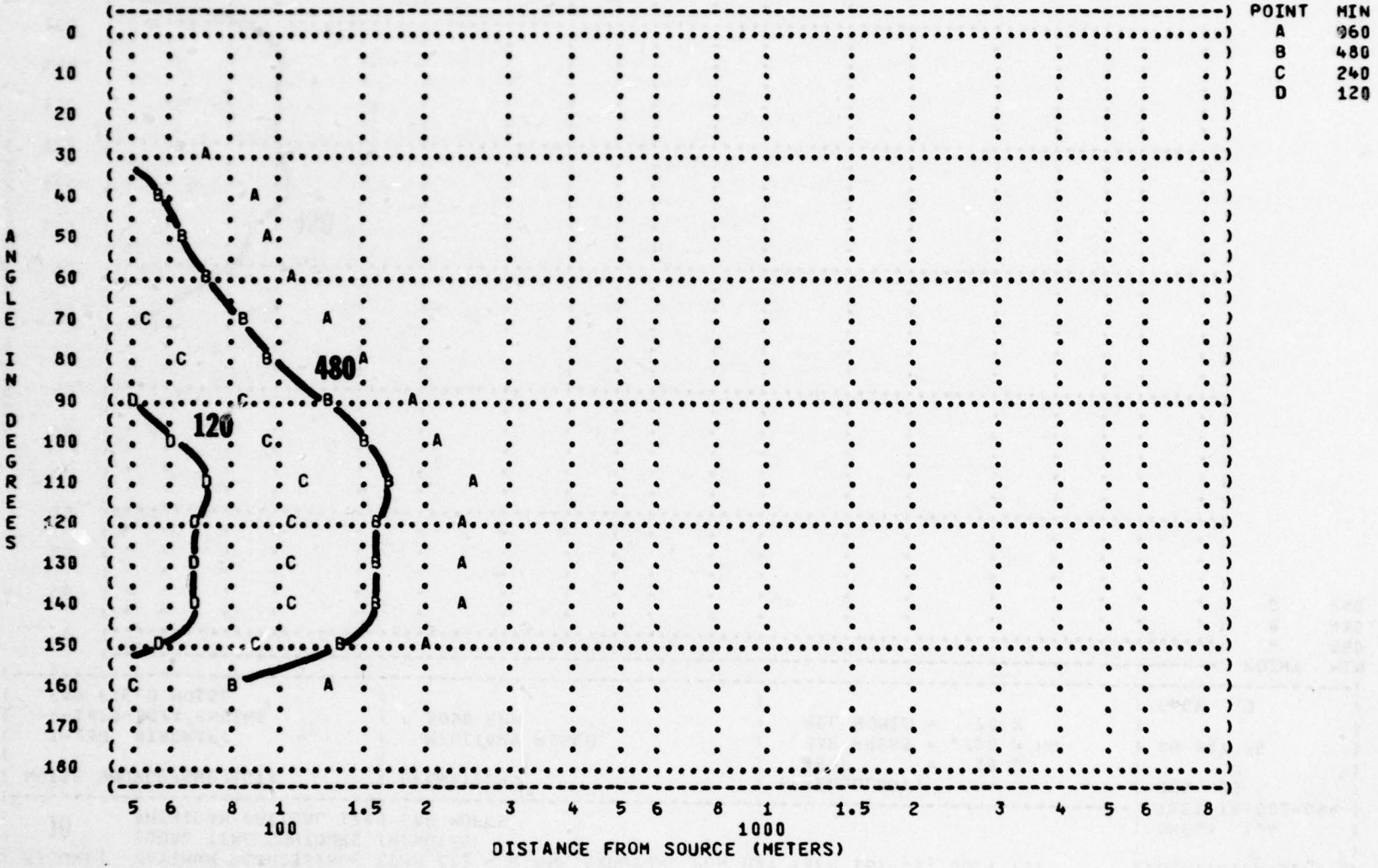


FIGURE: 10

MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
AMERICAN OPTICAL 1700 EAR MUFFS

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
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POINT	MIN
A	960
B	480
C	240

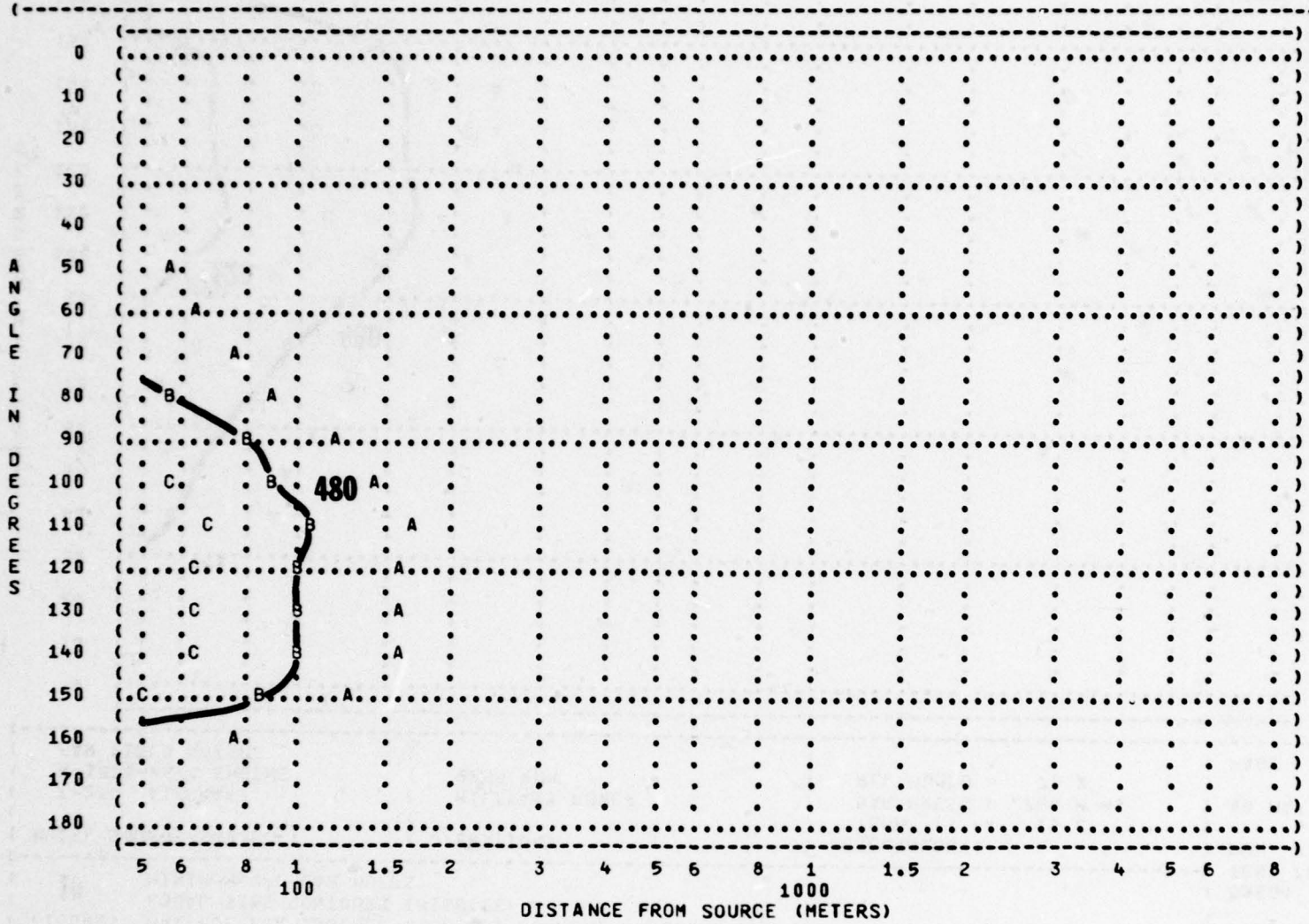

FIGURE: 10

MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
V-51R EAR PLUGS

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
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POINT	MIN
A	960
B	480

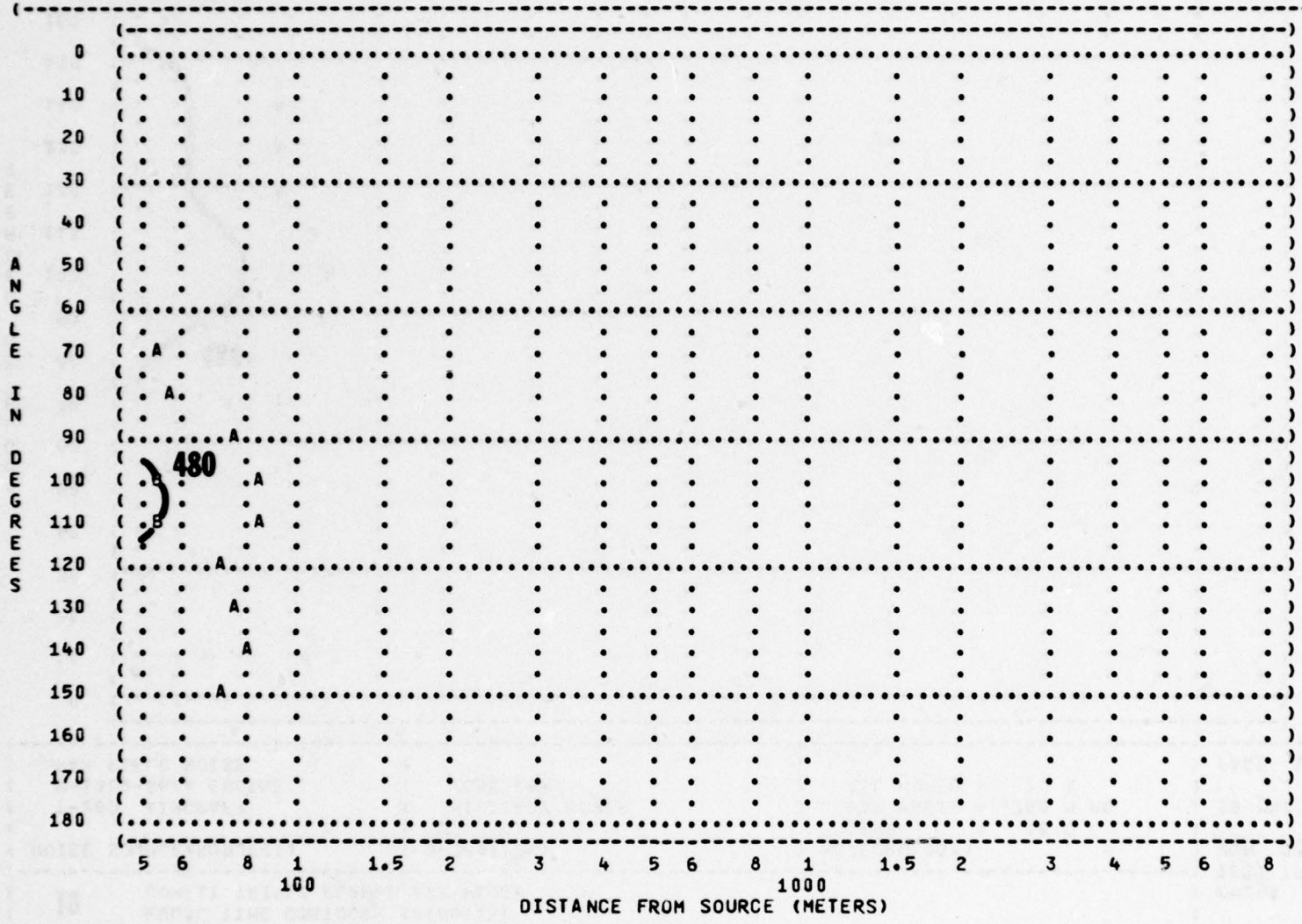

FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
COMFIT TRIPLE FLANGE EAR PLUGS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
PAGE 11

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	MIN
A	960
B	480
C	240

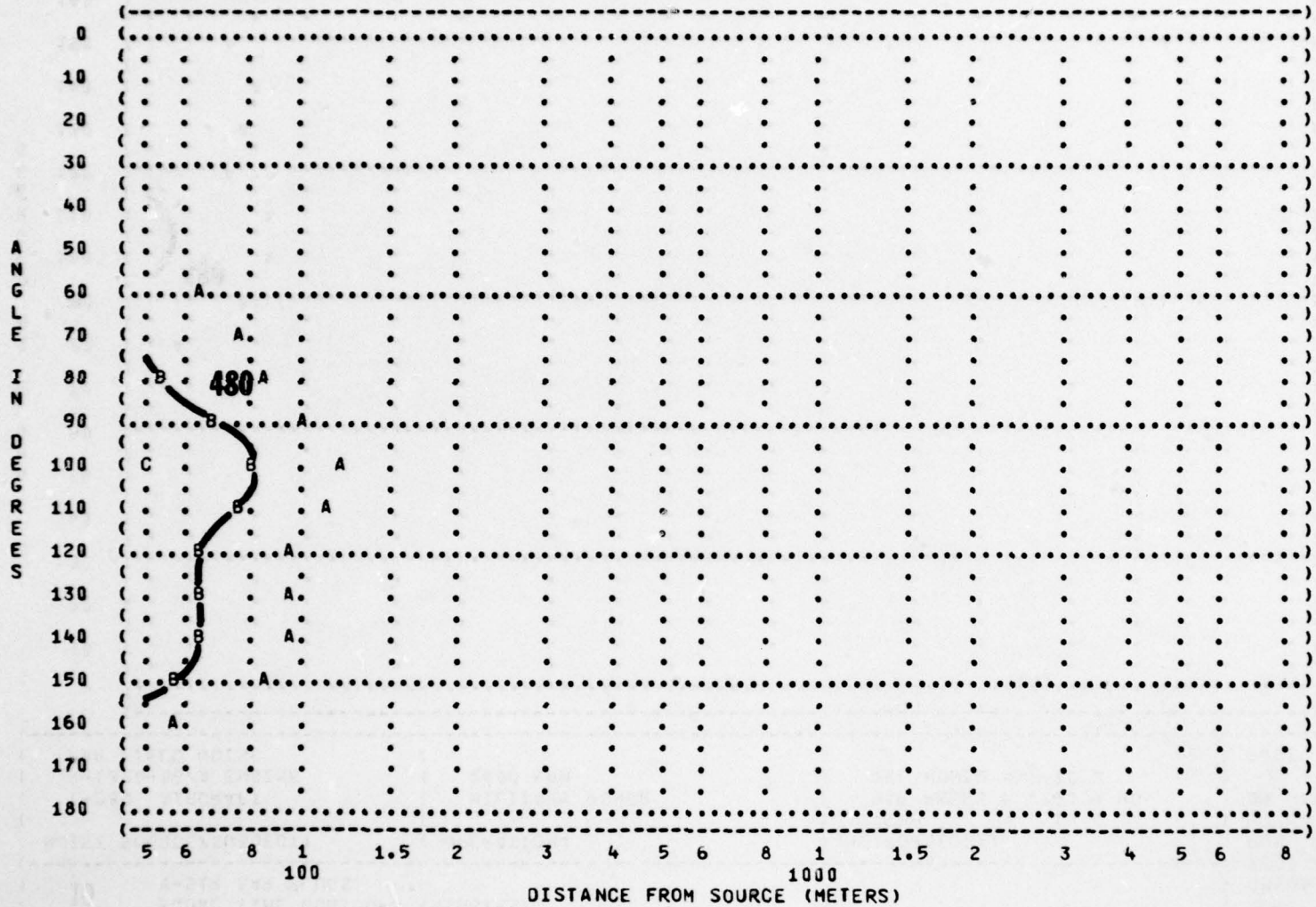

FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
H-133 GROUND COMMUNICATION UNIT

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
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NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	MIN
A	960
B	480

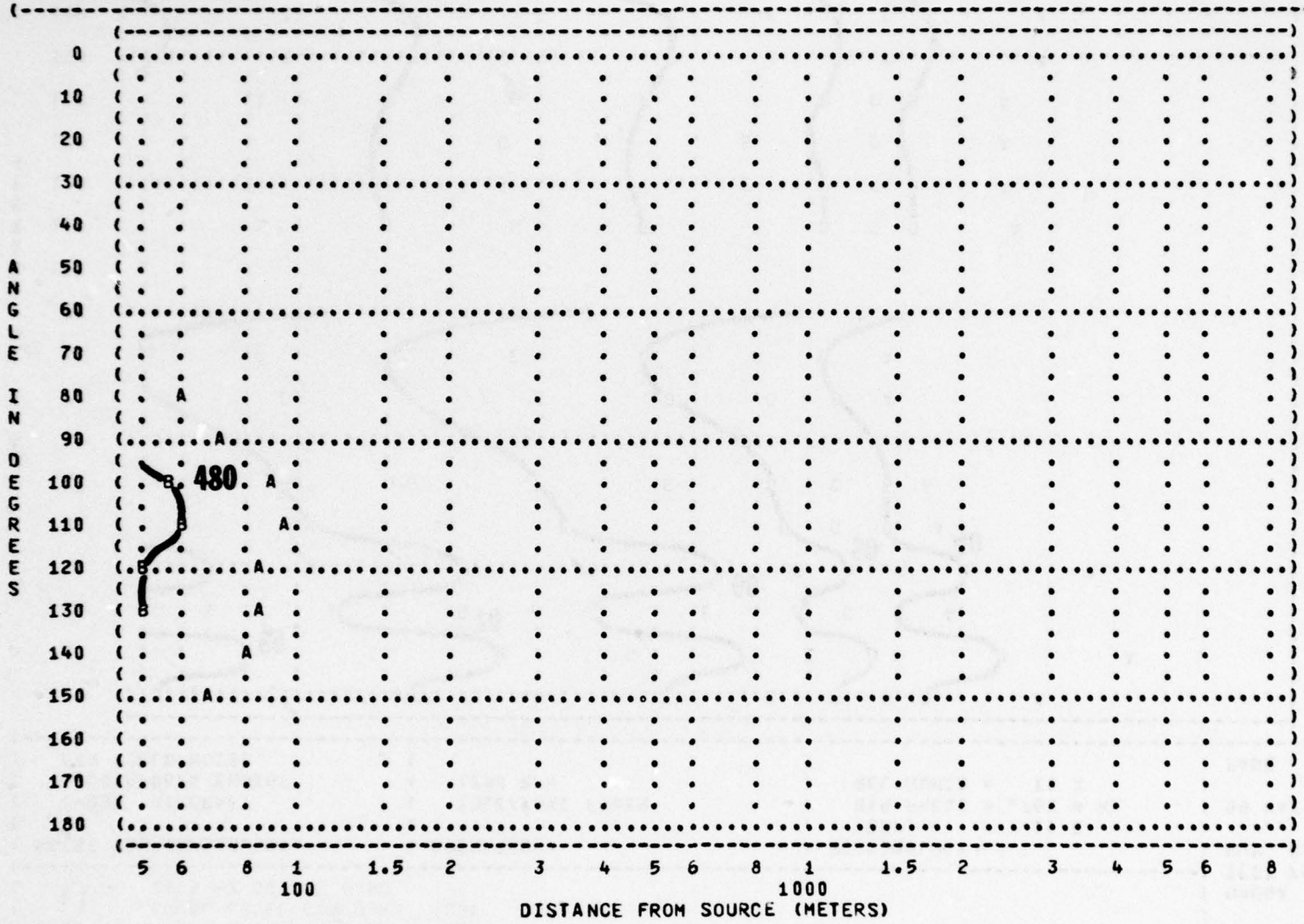

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE/TAXI POWER
1200 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 01
09 MAY 75
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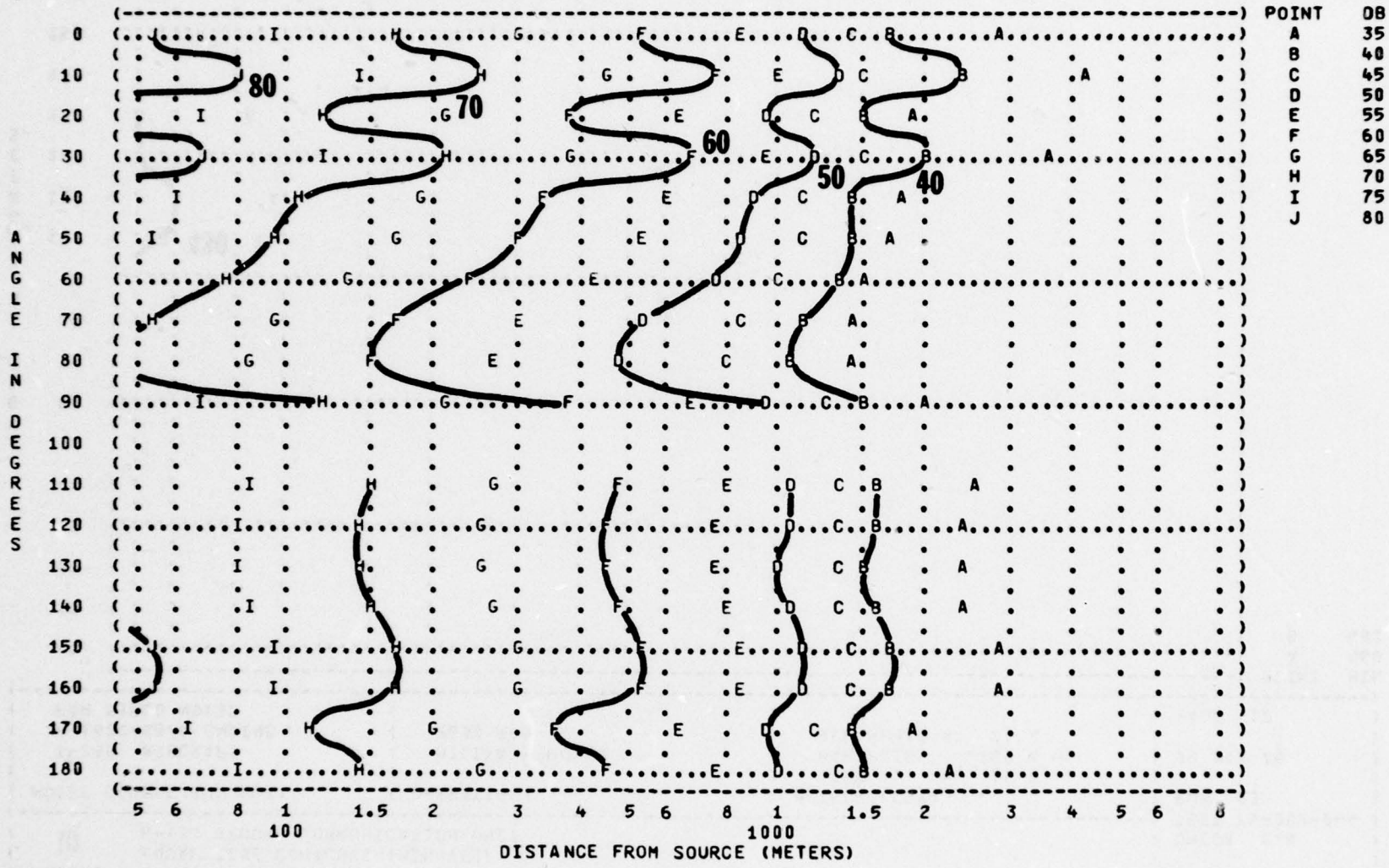


POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80

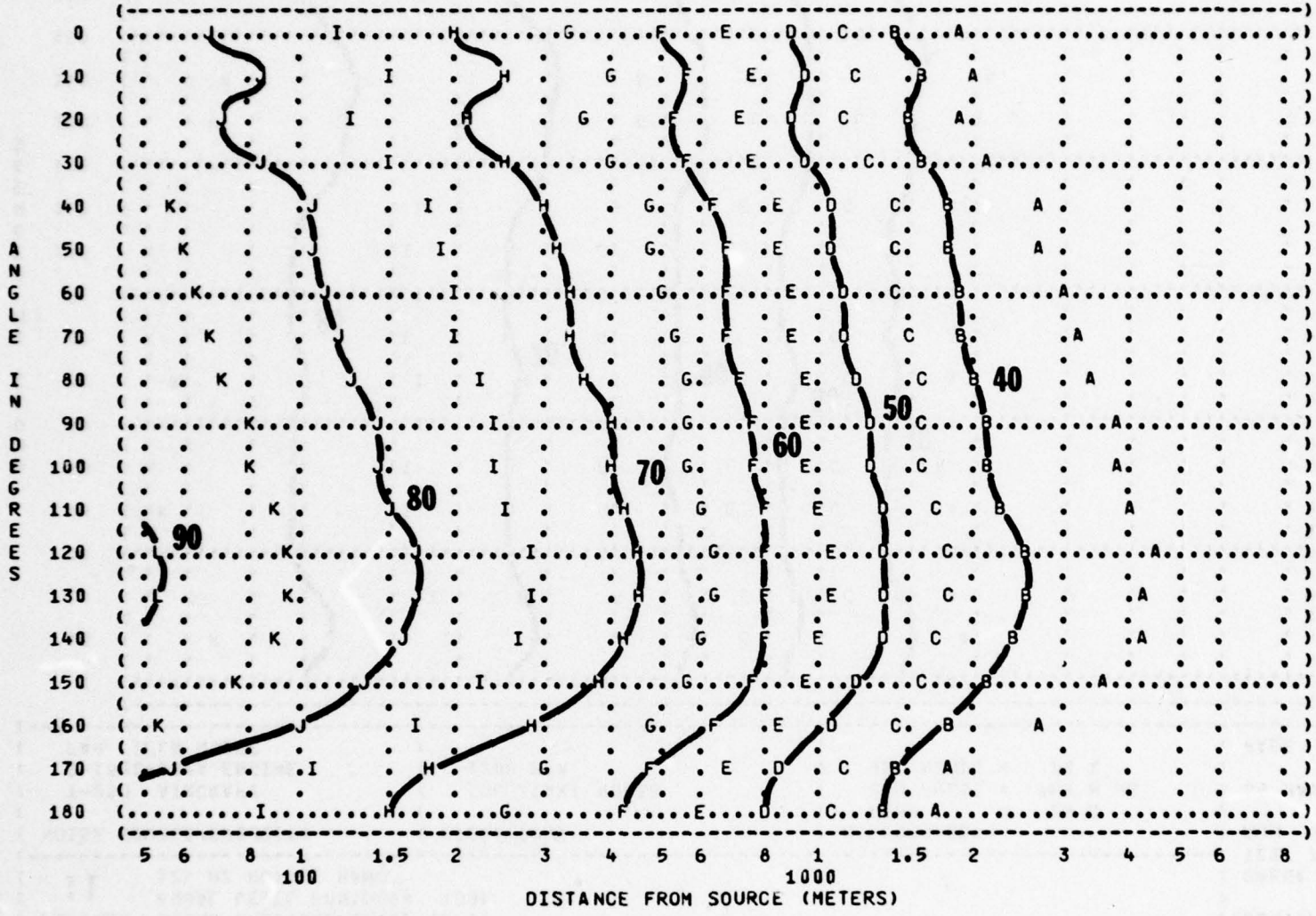
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-044 RUN 01 09 MAY 75 PAGE 19

NOISE SOURCE/SUBJECT: T-28D AIRCRAFT, R-1820-86/A ENGINE, FAR FIELD NOISE

OPERATION: IDLE/TAXI POWER, 1200 RPM

METEOROLOGY: TEMP = 15 C, BAR PRESS = .760 M HG, REL HUMID = 70 %



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-044 RUN 01 09 MAY 75 PAGE 20

NOISE SOURCE/SUBJECT: T-28D AIRCRAFT, R-1820-86/A ENGINE, FAR FIELD NOISE

OPERATION: IDLE/TAXI POWER, 1200 RPM

METEOROLOGY: TEMP = 15 C, BAR PRESS = .760 M HG, REL HUMID = 70 %

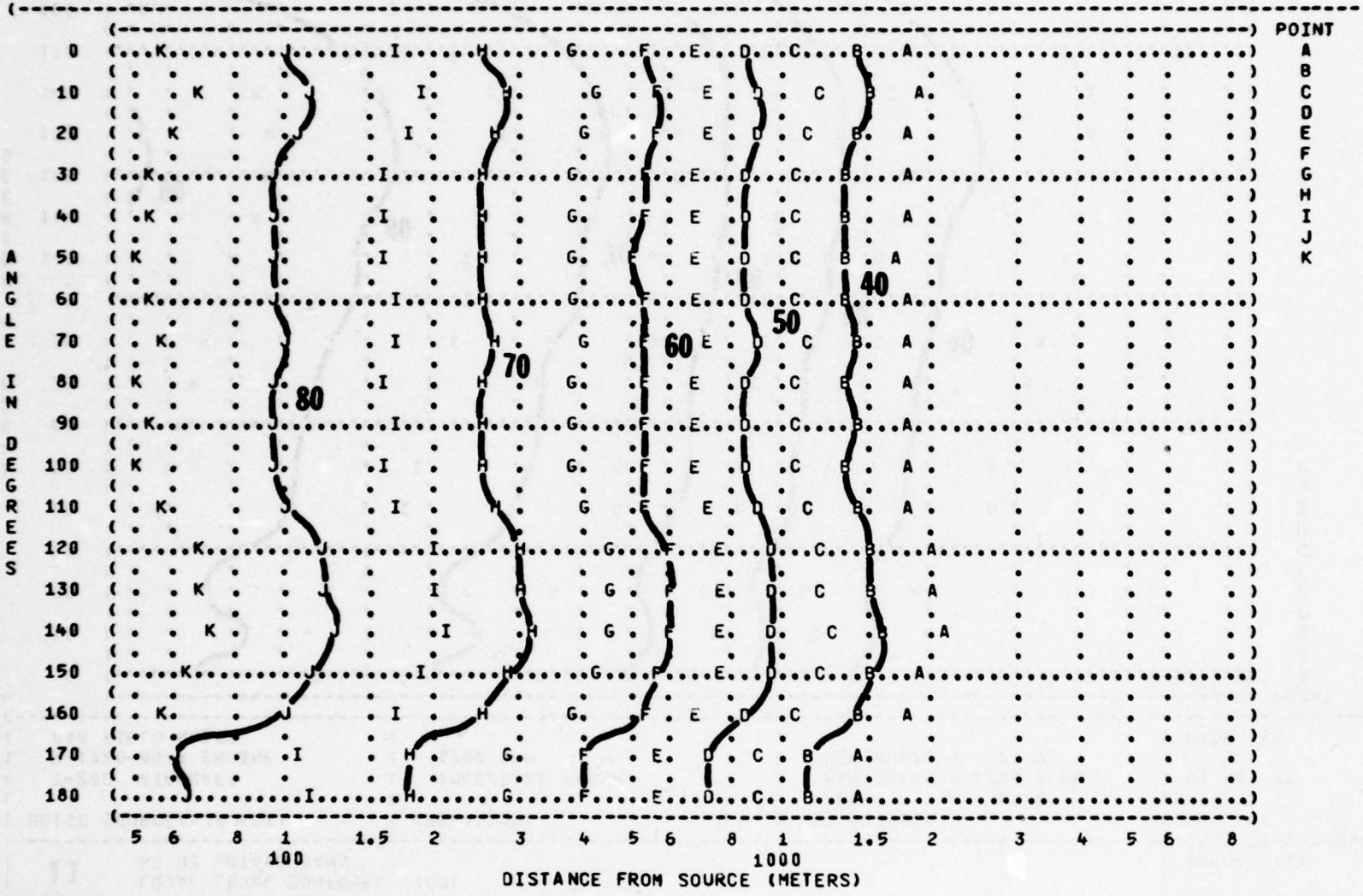


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE/TAXI POWER
1200 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 01
09 MAY 75
PAGE 21

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80

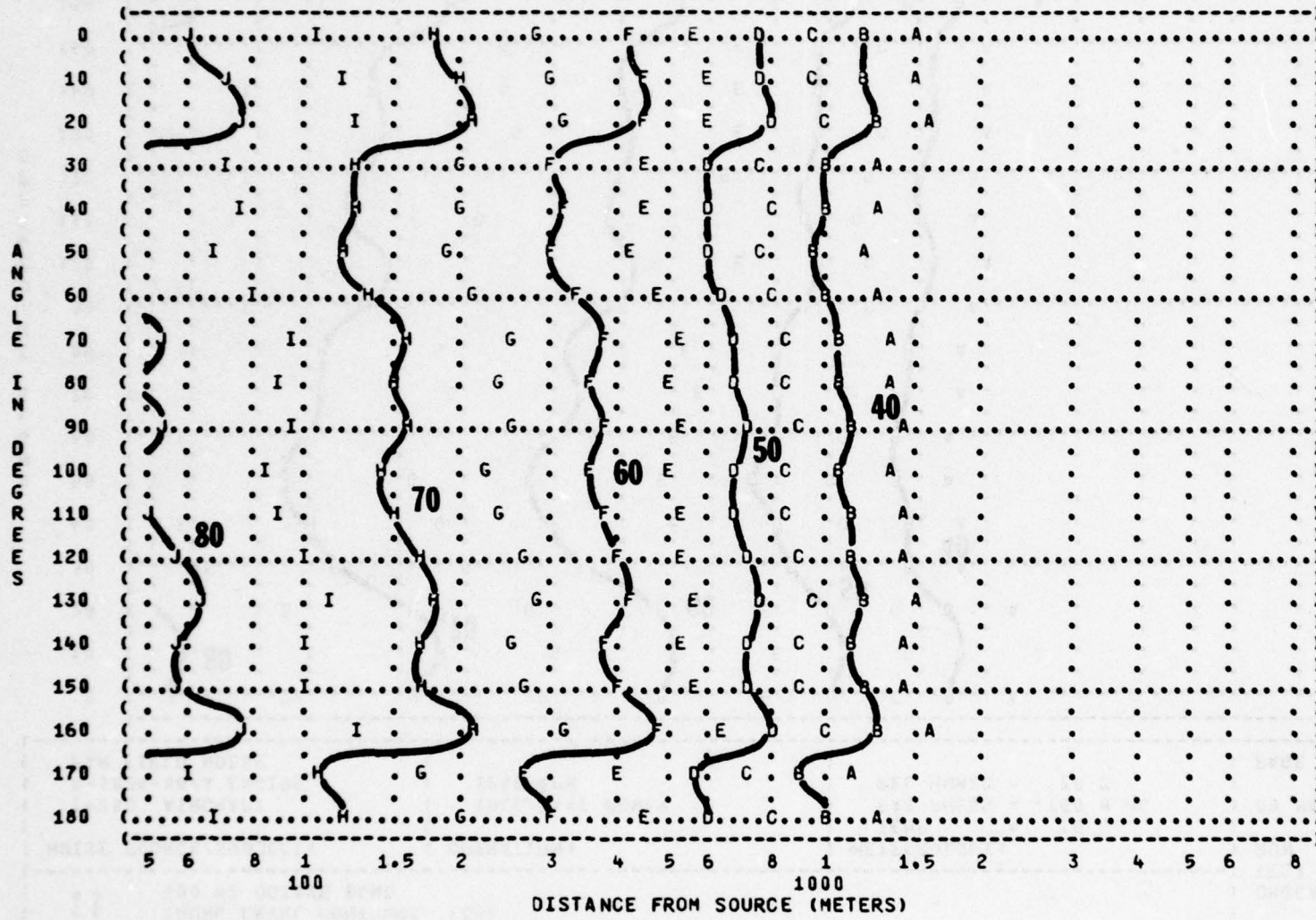


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-044 RUN 01 09 MAY 75 PAGE 22

NOISE SOURCE/SUBJECT: T-28D AIRCRAFT R-1820-86/A ENGINE FAR FIELD NOISE

OPERATION: IDLE/TAXI POWER 1200 RPM

METEOROLOGY: TEMP = 15 C BAR PRESS = .760 M HG REL HUMID = 70 %

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80

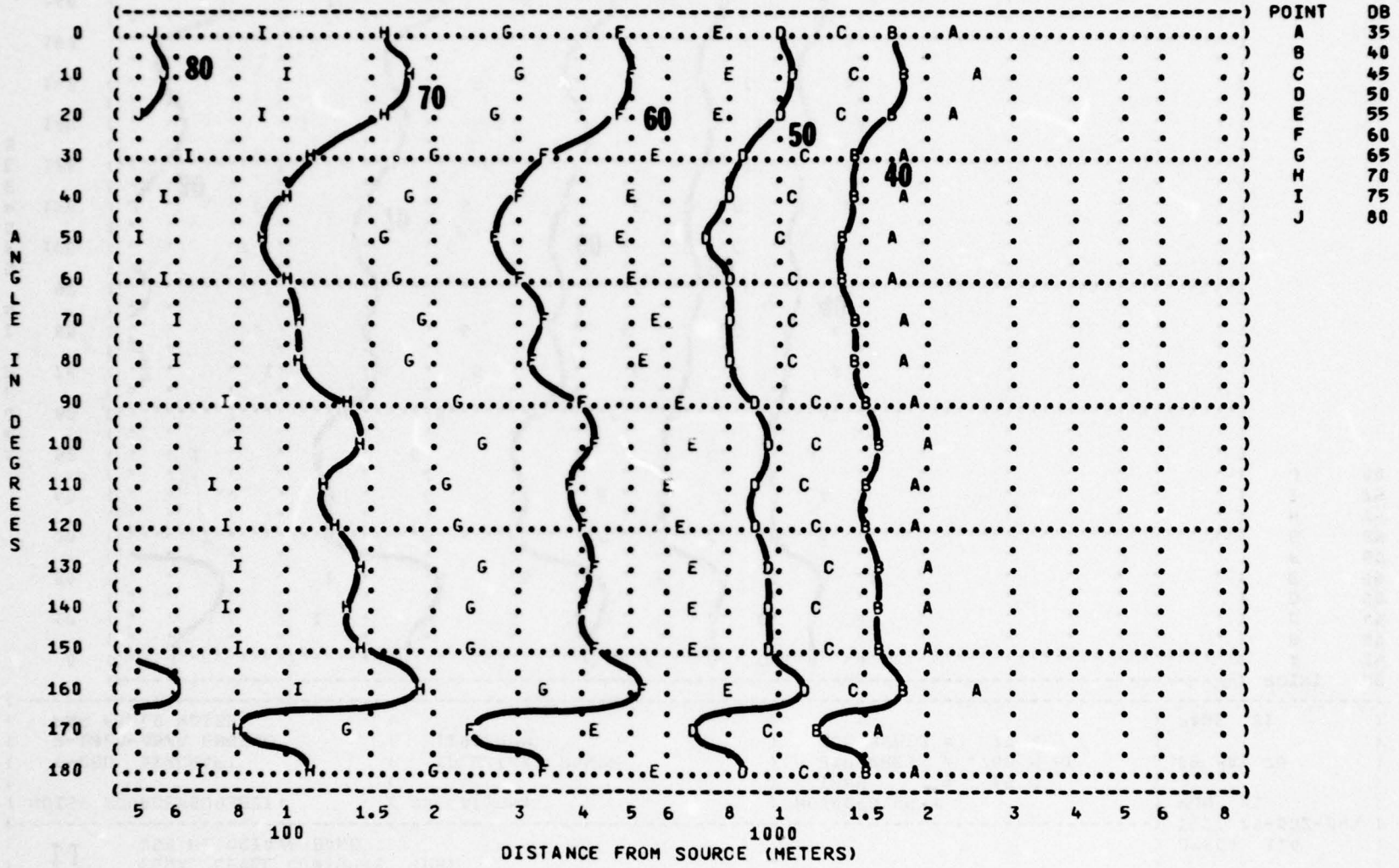


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE/TAXI POWER
1200 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 01
09 MAY 75
PAGE 23

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75

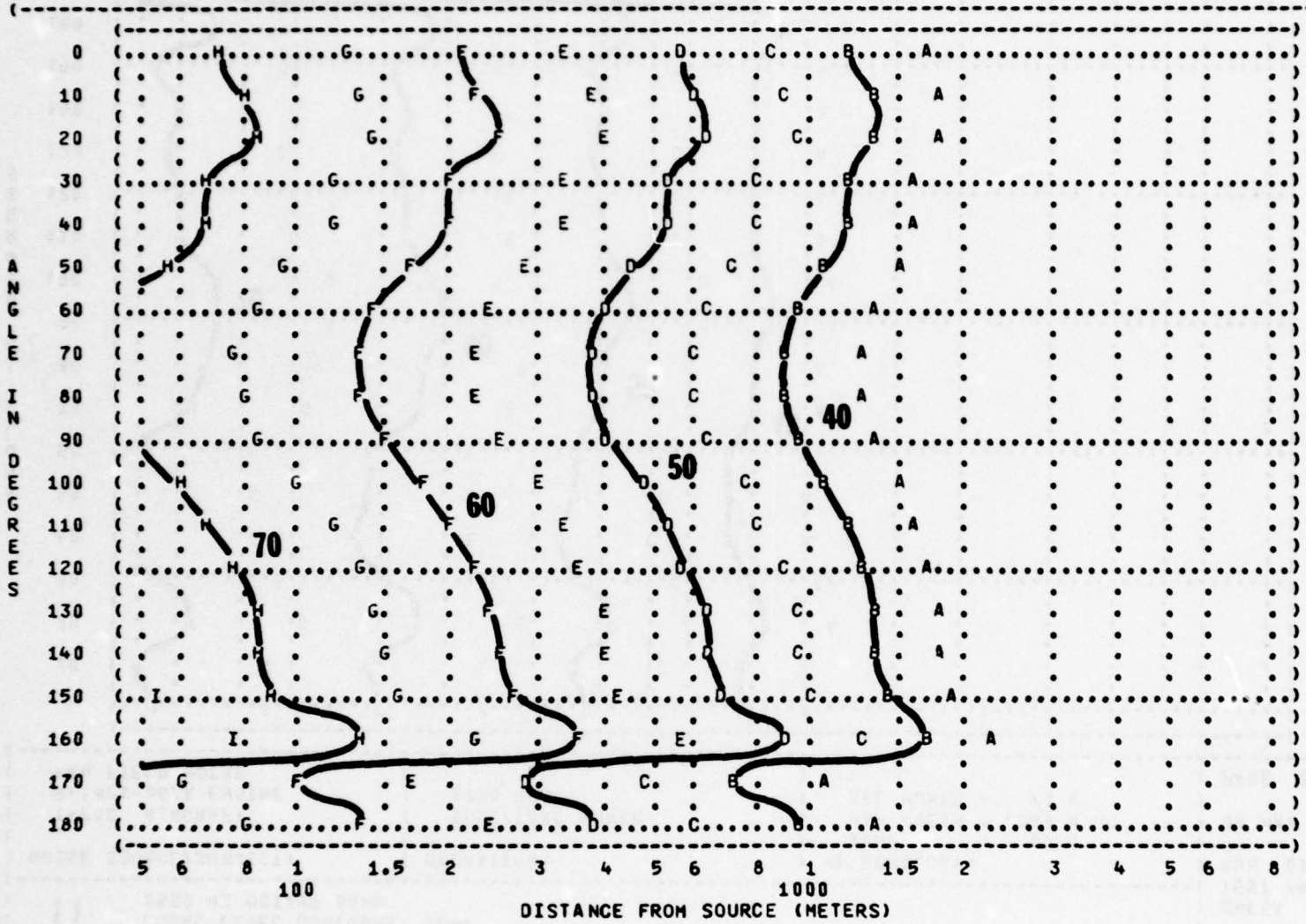


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-044 RUN 01 09 MAY 75 PAGE 24

NOISE SOURCE/SUBJECT: T-28D AIRCRAFT; R-1820-86/A ENGINE; FAR FIELD NOISE

OPERATION: IDLE/TAXI POWER; 1200 RPM

METEOROLOGY: TEMP = 15 C; BAR PRESS = .760 M HG; REL HUMID = 70 %

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70

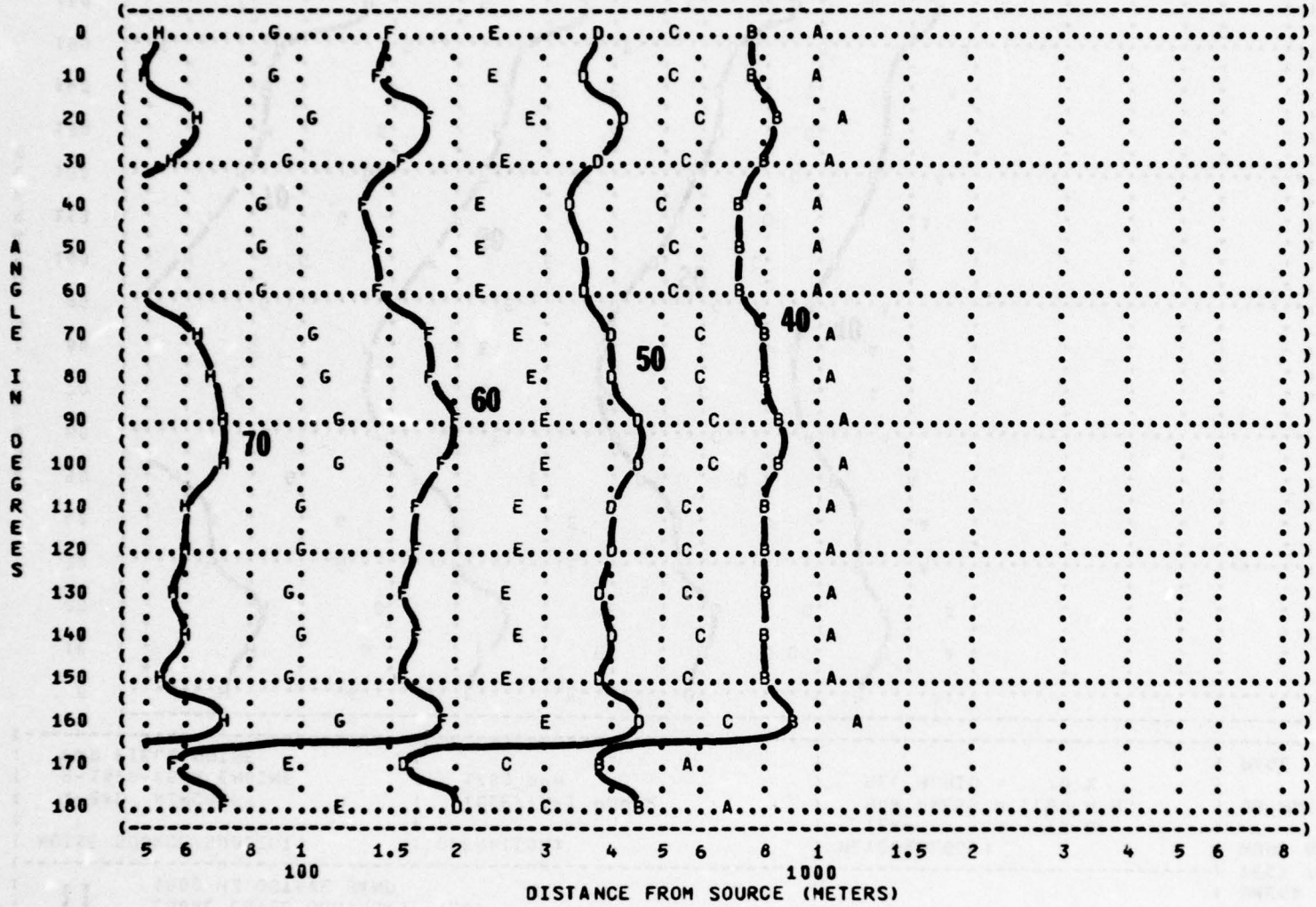


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE/TAXI POWER
1200 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 01
09 MAY 75
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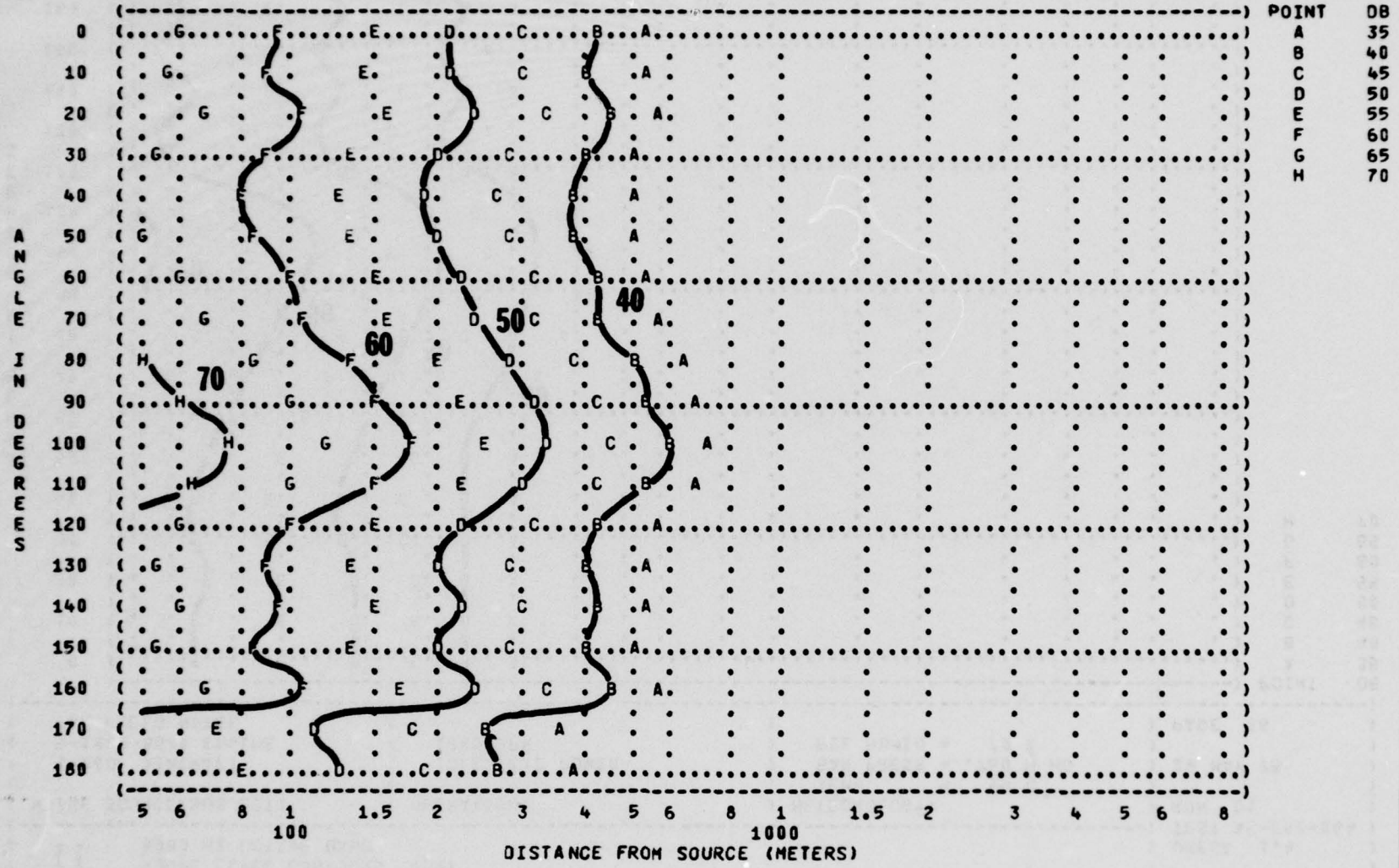

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE/TAXI POWER
1200 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 01
09 MAY 75
PAGE 26

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70

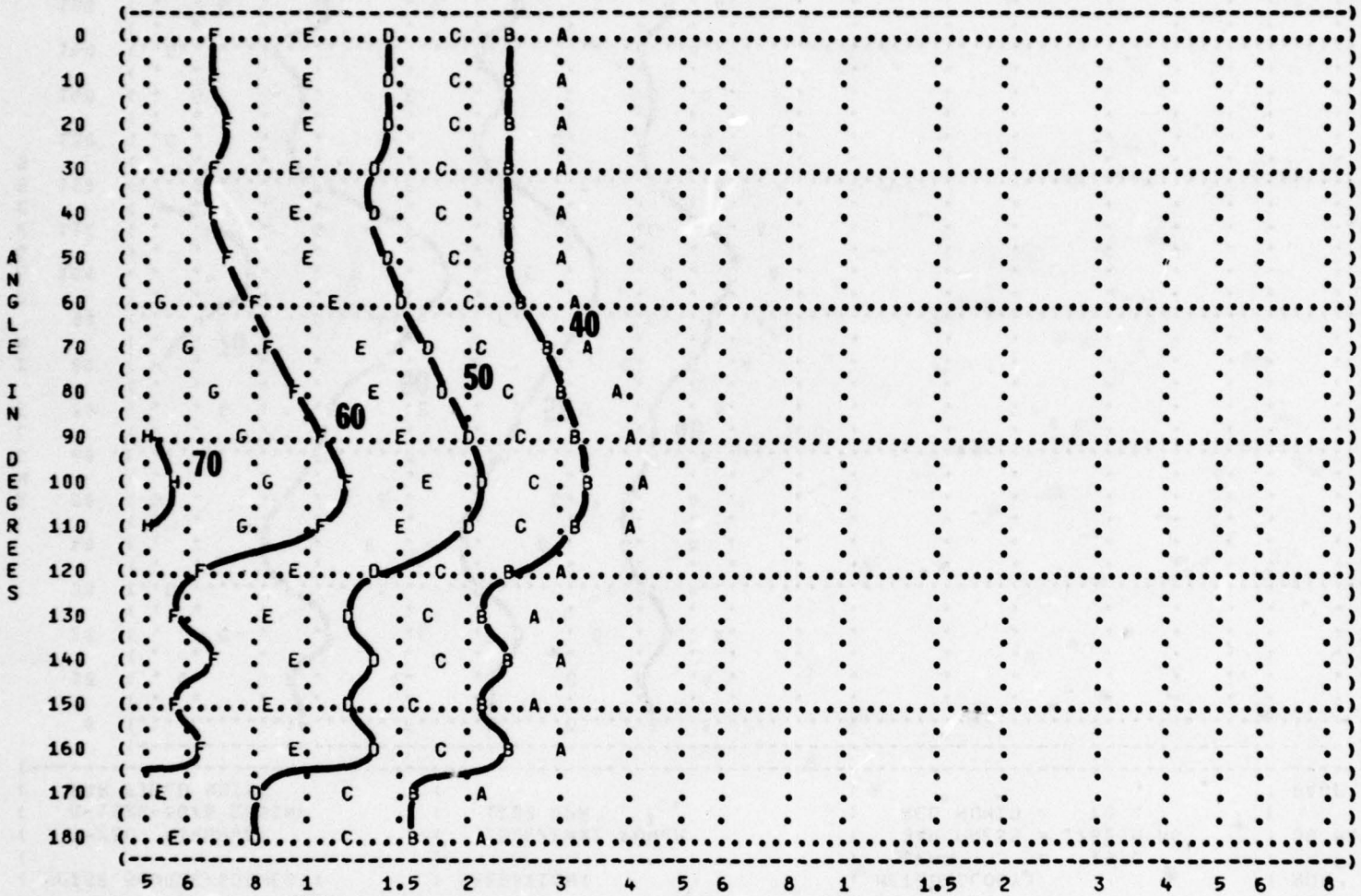

FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
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POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95

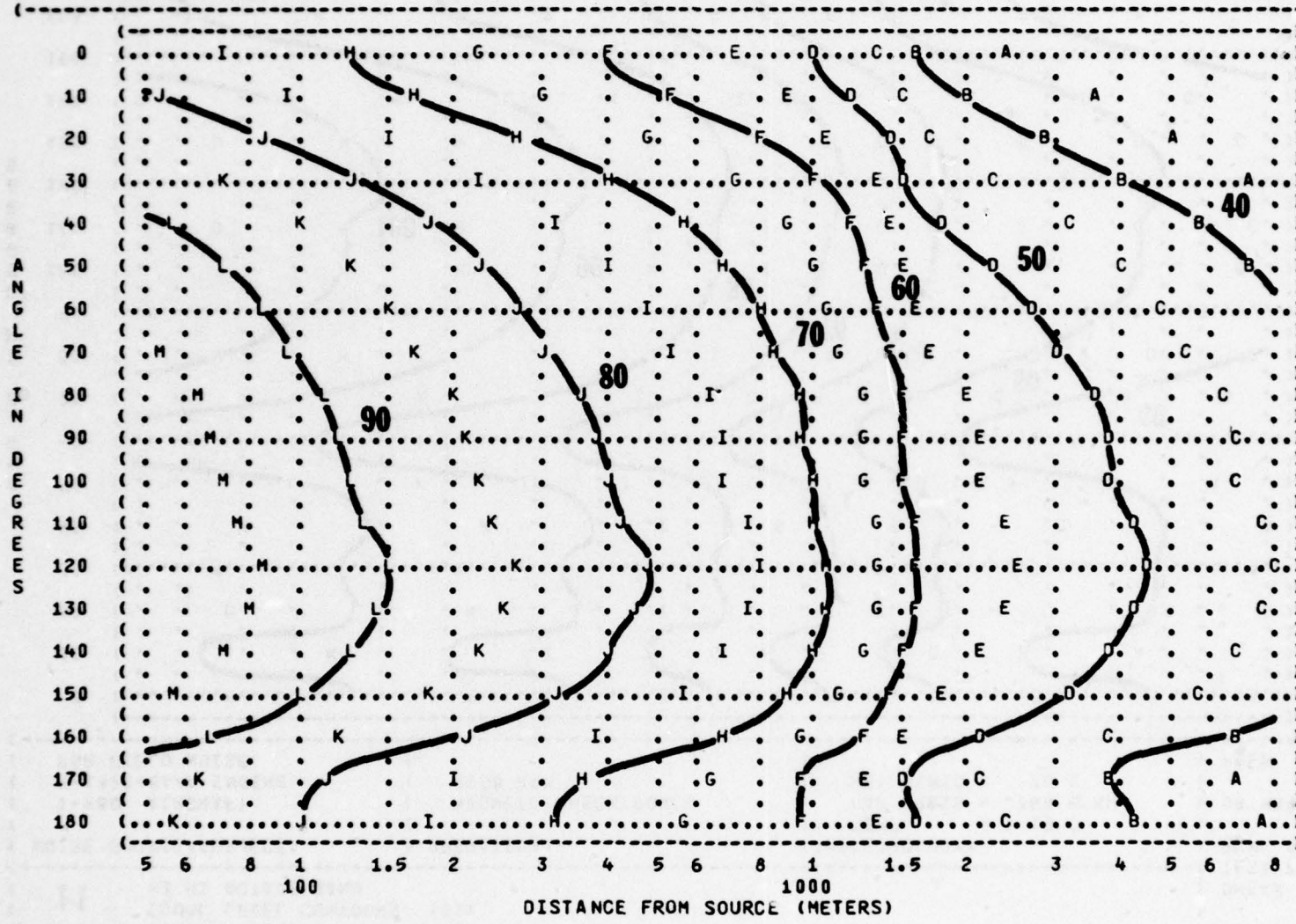


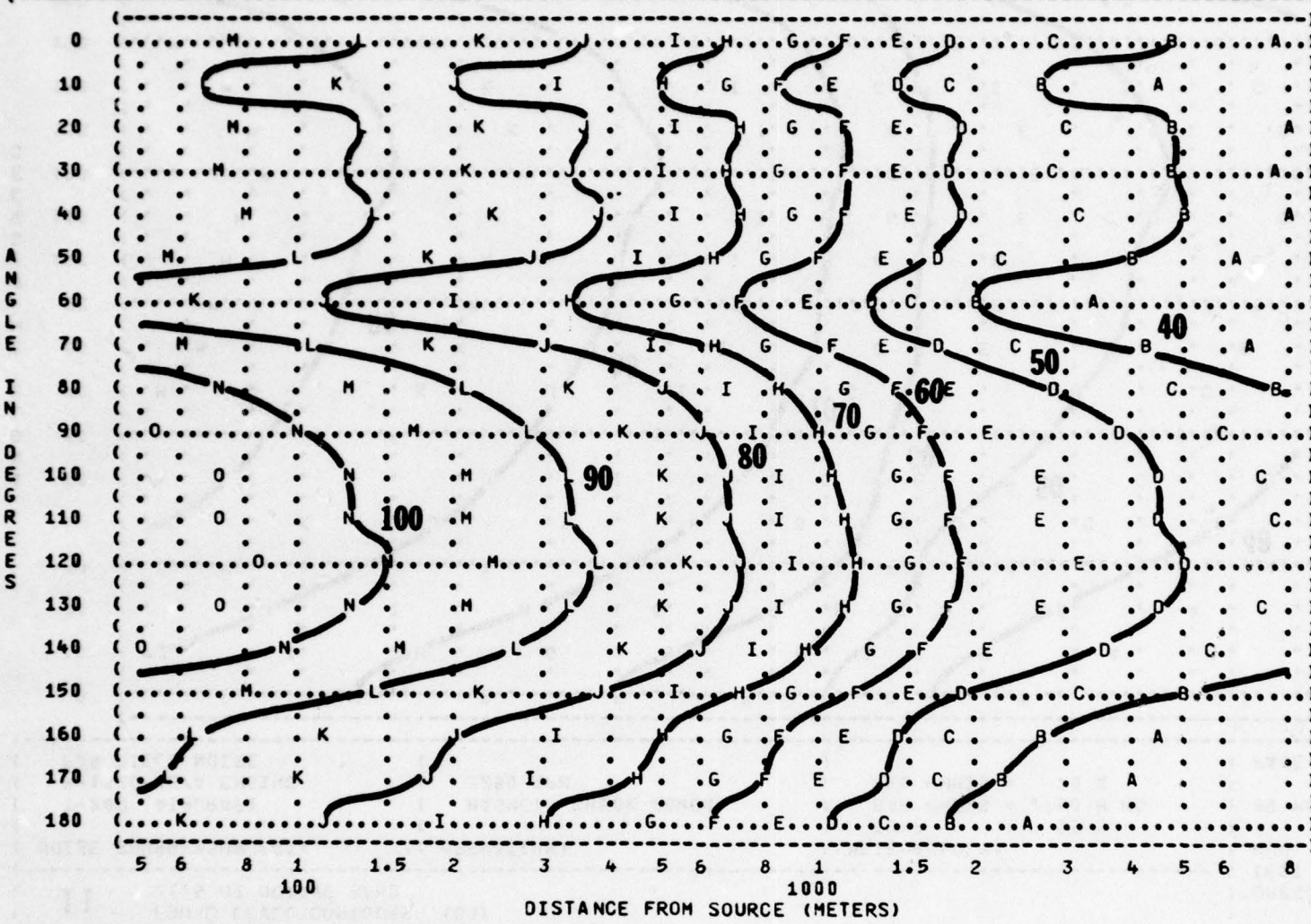
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
PAGE 19



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105

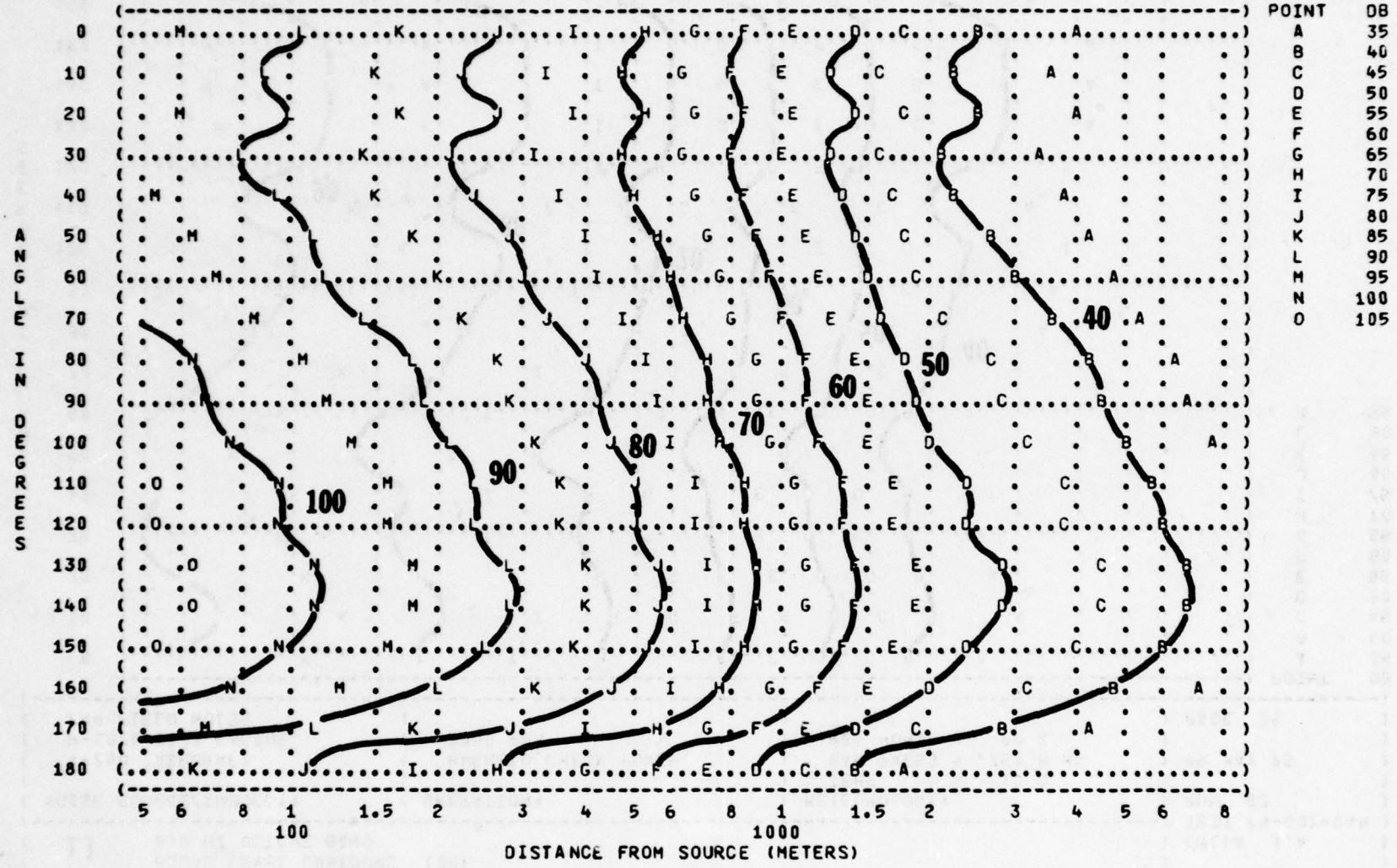
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
PAGE 20



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105

FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-044 RUN 02 09 MAY 75 PAGE 21

NOISE SOURCE/SUBJECT: T-28D AIRCRAFT R-1820-86/A ENGINE FAR FIELD NOISE

OPERATION: MAGNETO CHECK POWER 2250 RPM

METEOROLOGY: TEMP = 15 C BAR PRESS = .760 M HG REL HUMID = 70 %

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95

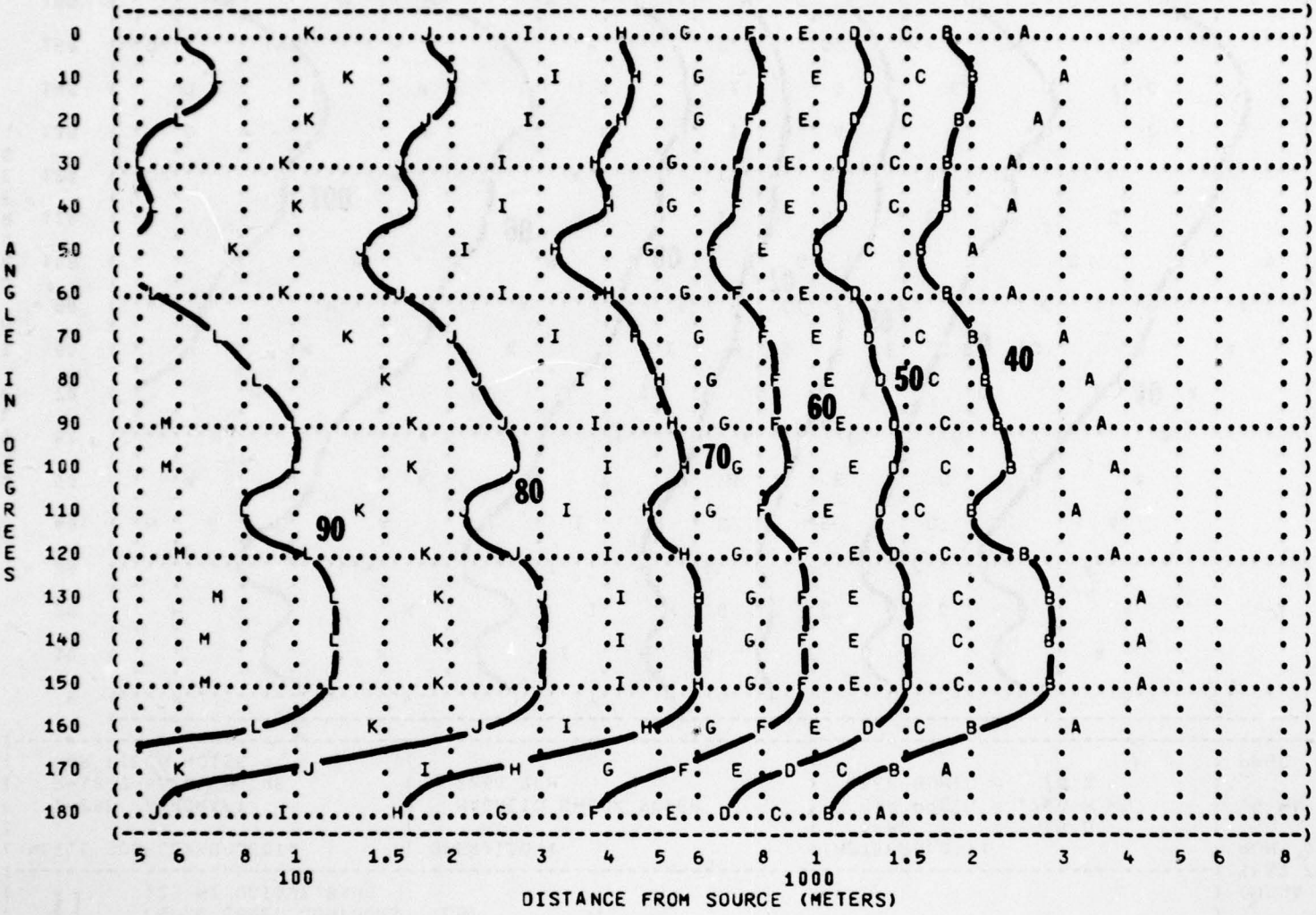


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
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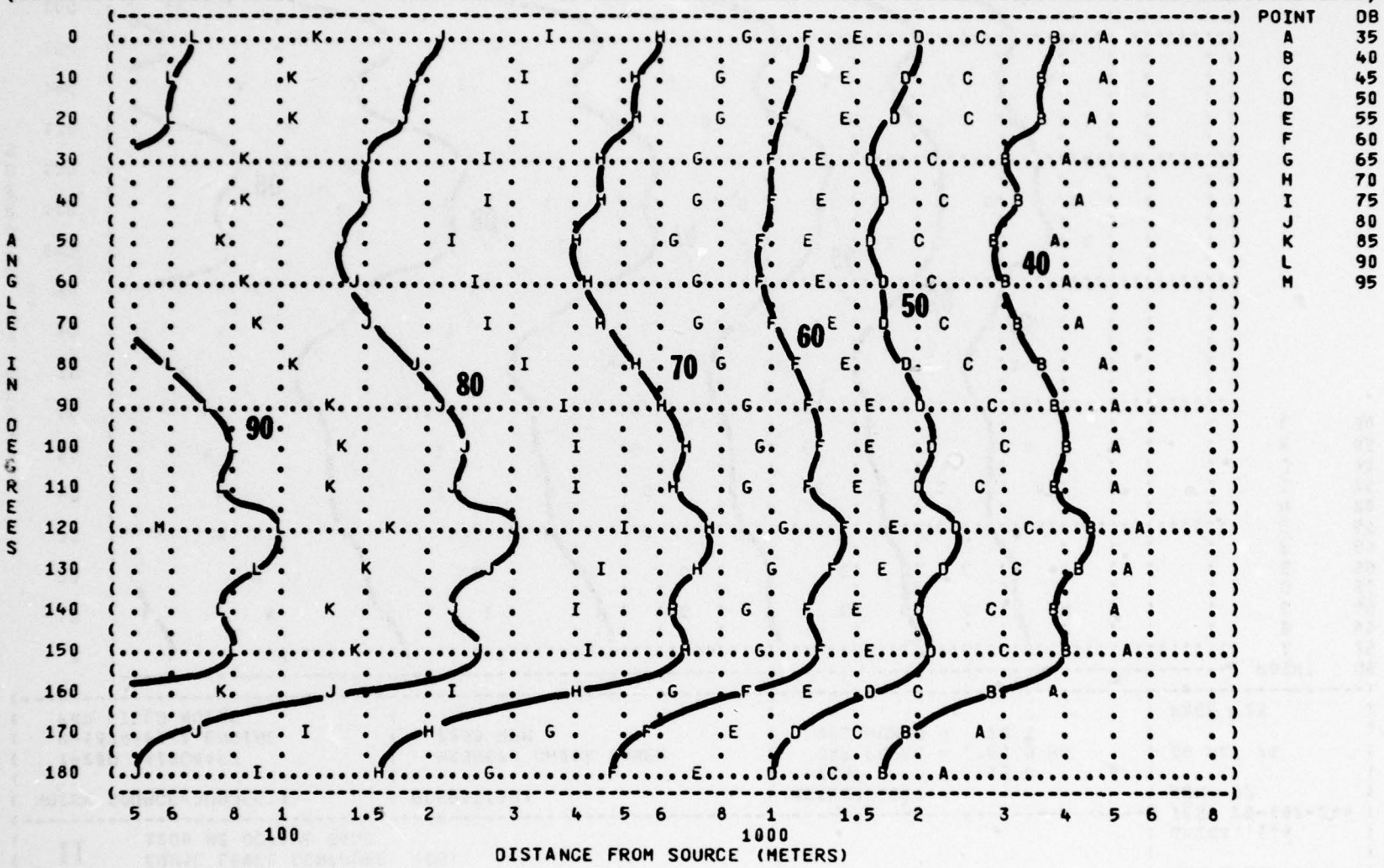


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-044 RUN 02 09 MAY 75 PAGE 23

NOISE SOURCE/SUBJECT: T-28D AIRCRAFT R-1820-86/A ENGINE FAR FIELD NOISE

OPERATION: MAGNETO CHECK POWER 2250 RPM

METEOROLOGY: TEMP = 15 C BAR PRESS = .760 M HG REL HUMID = 70 %

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90

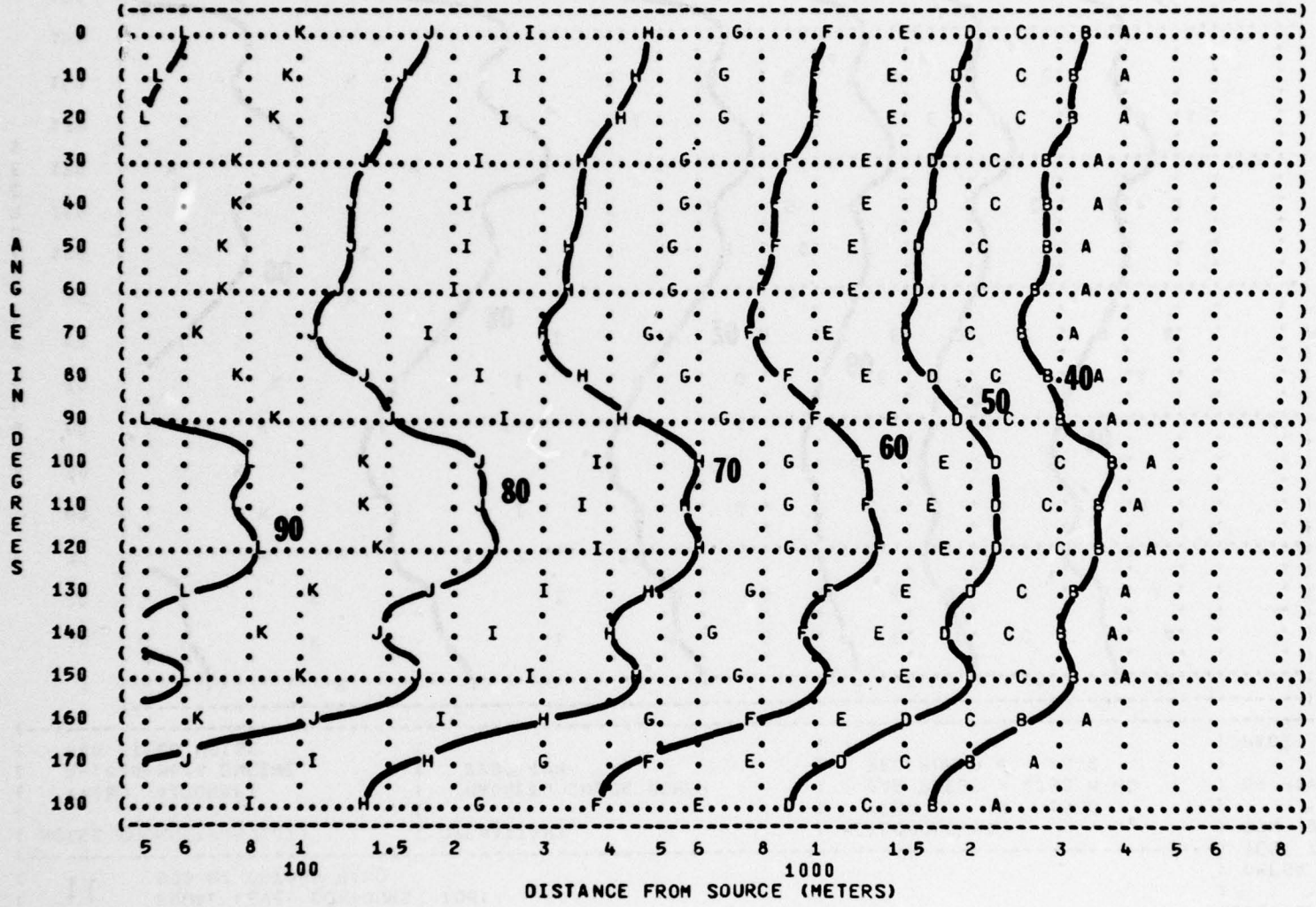


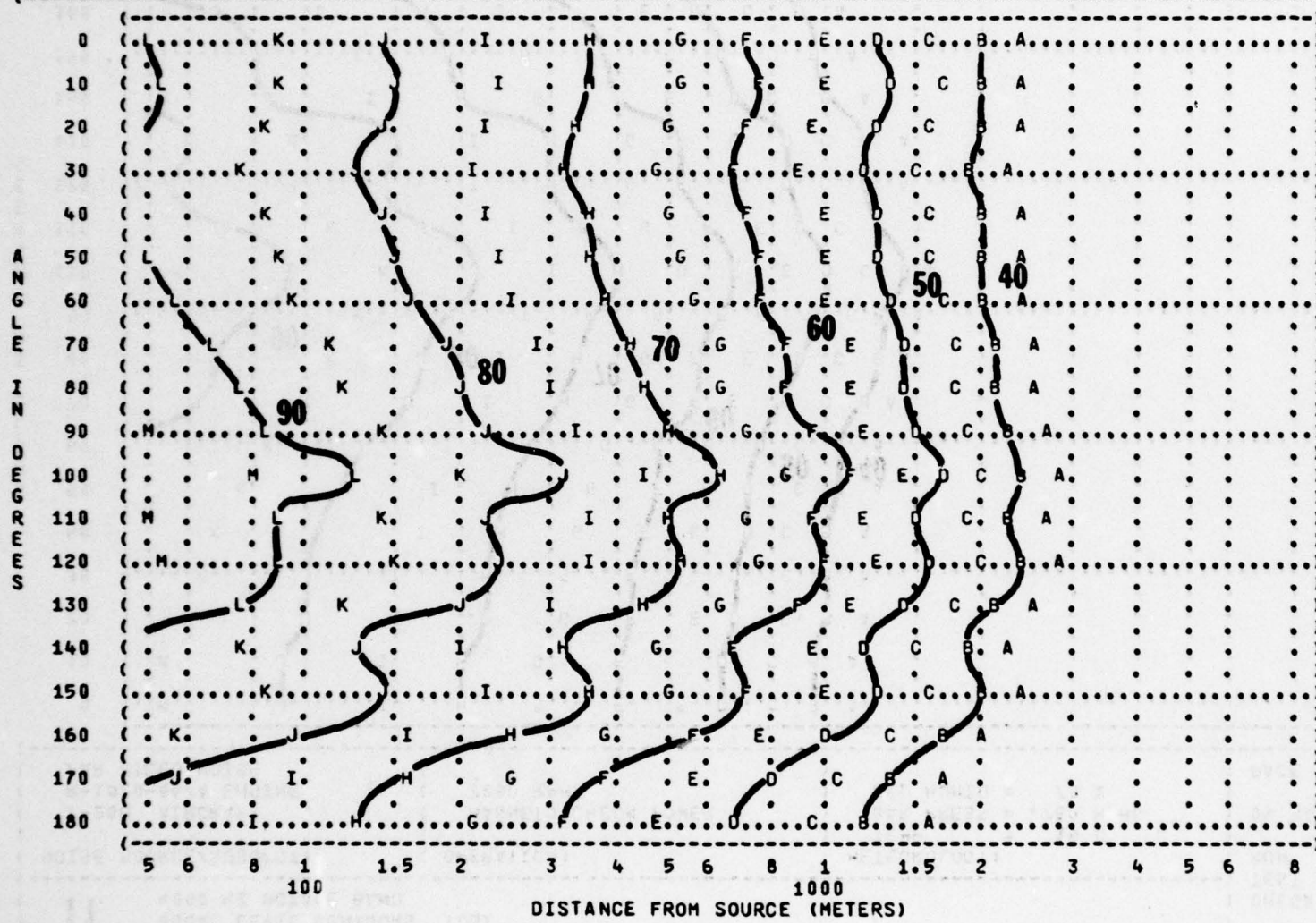
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
PAGE 24



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95

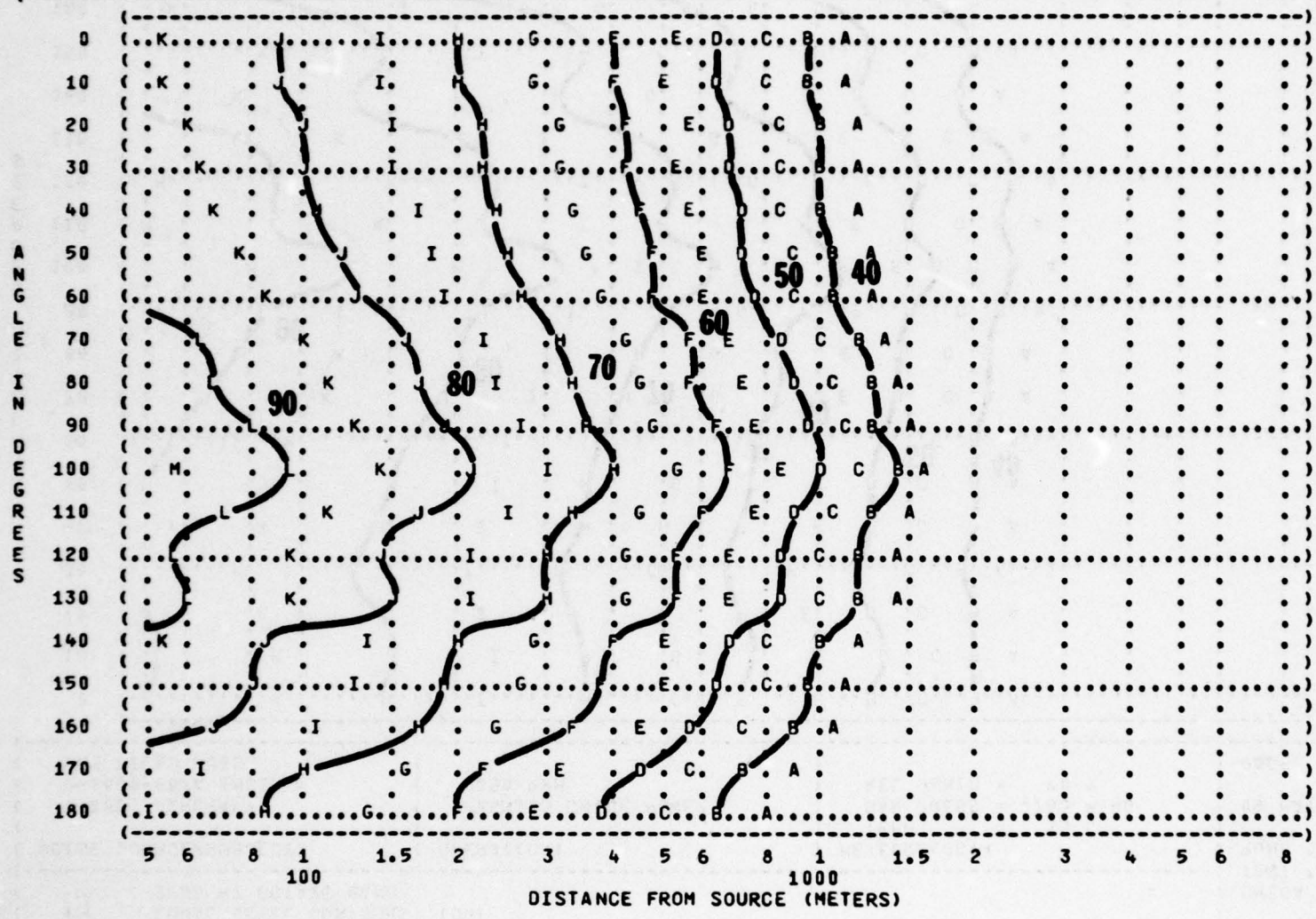
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75
PAGE 25



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95

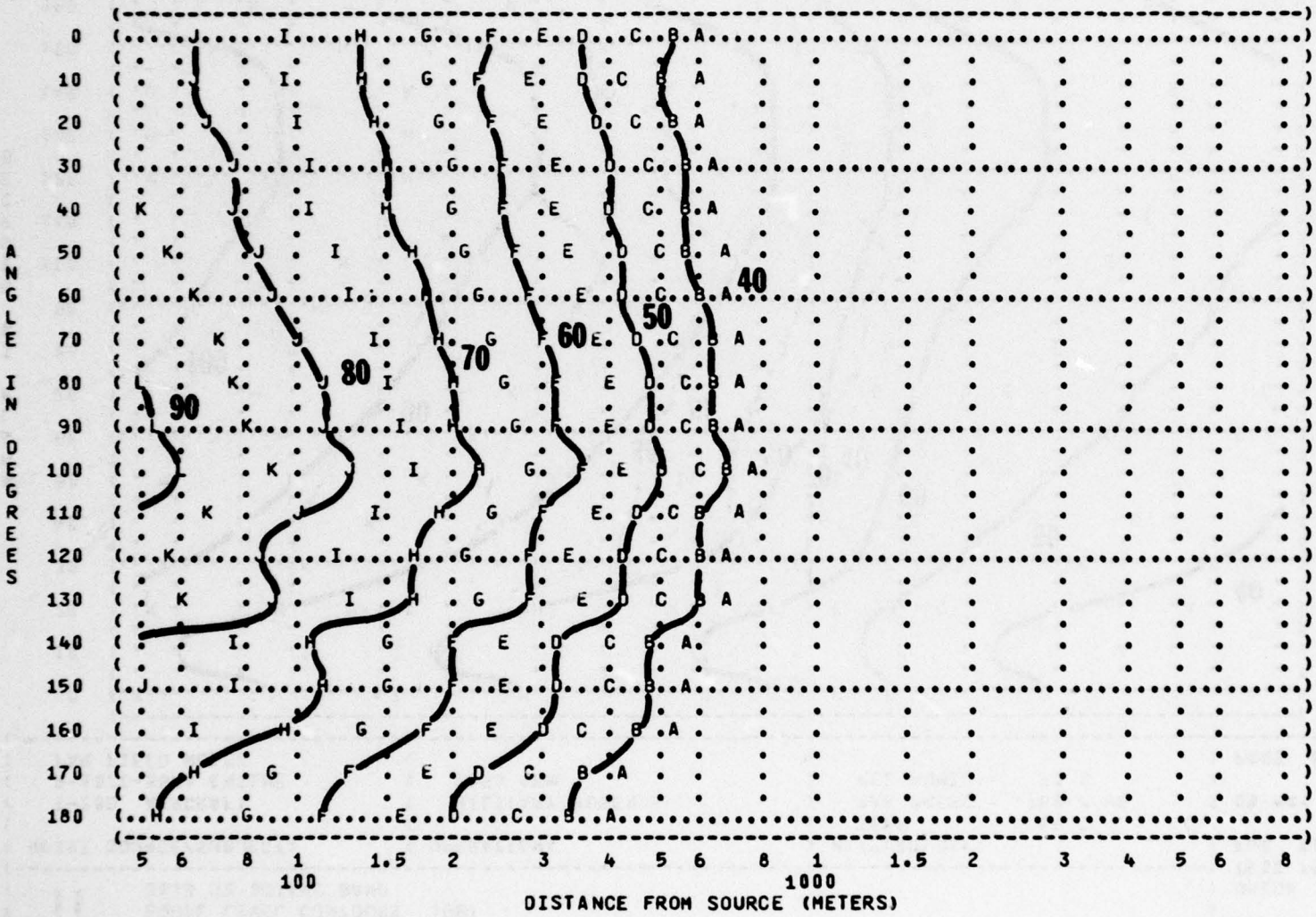
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MAGNETO CHECK POWER
2250 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 02
09 MAY 75



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
PAGE 18

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105

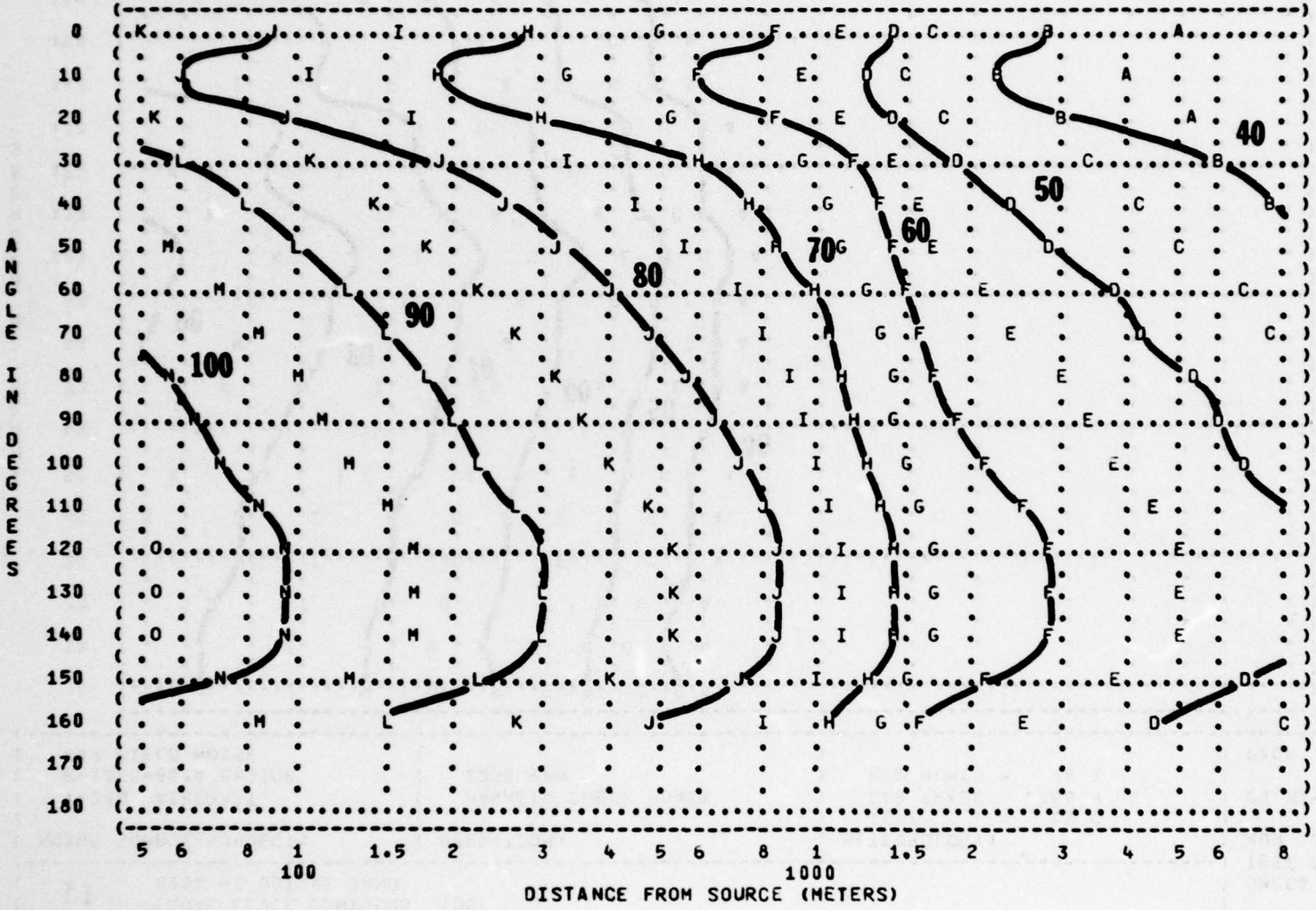


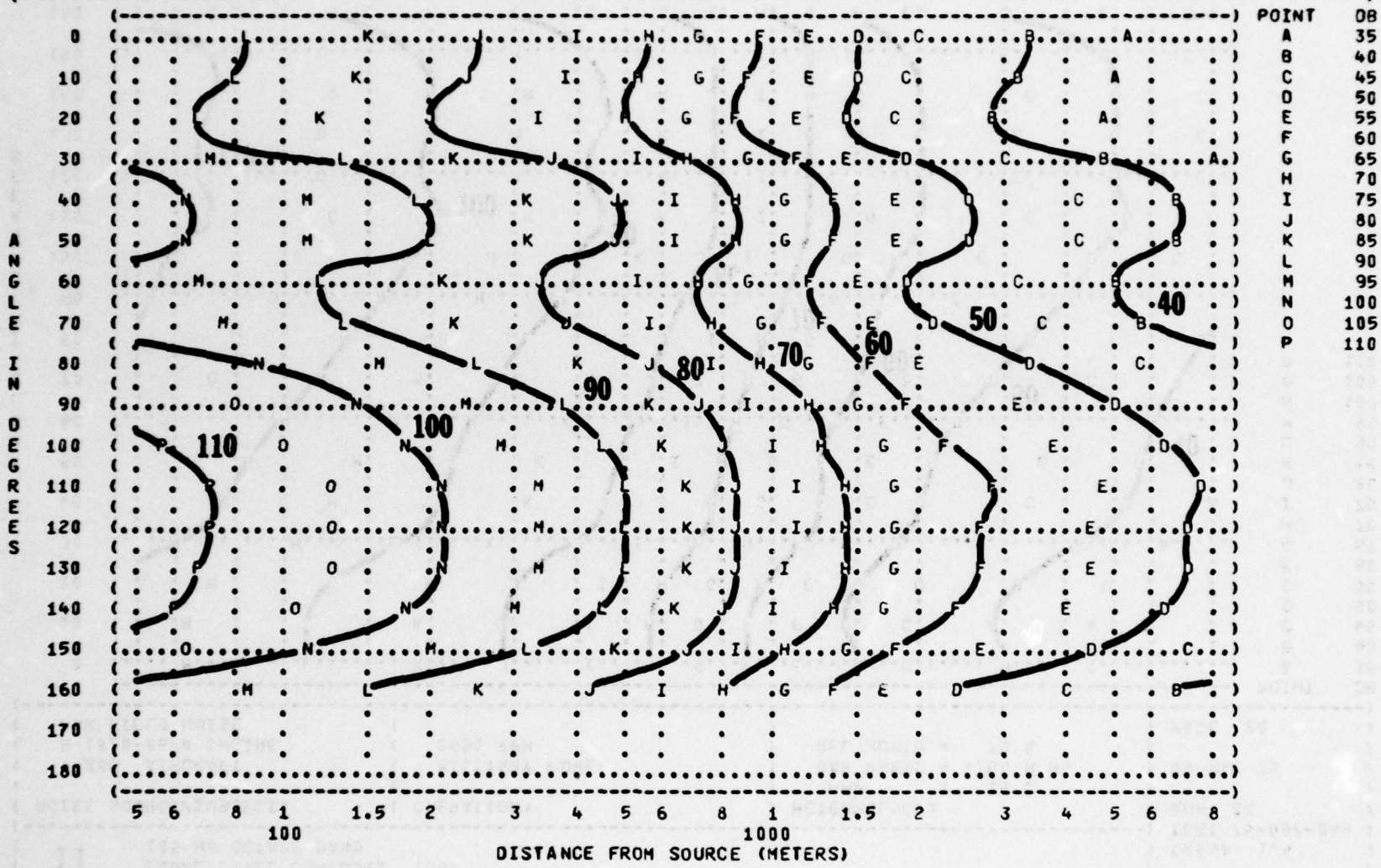
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
PAGE 19



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105
P	110

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
PAGE 20

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105
P	110

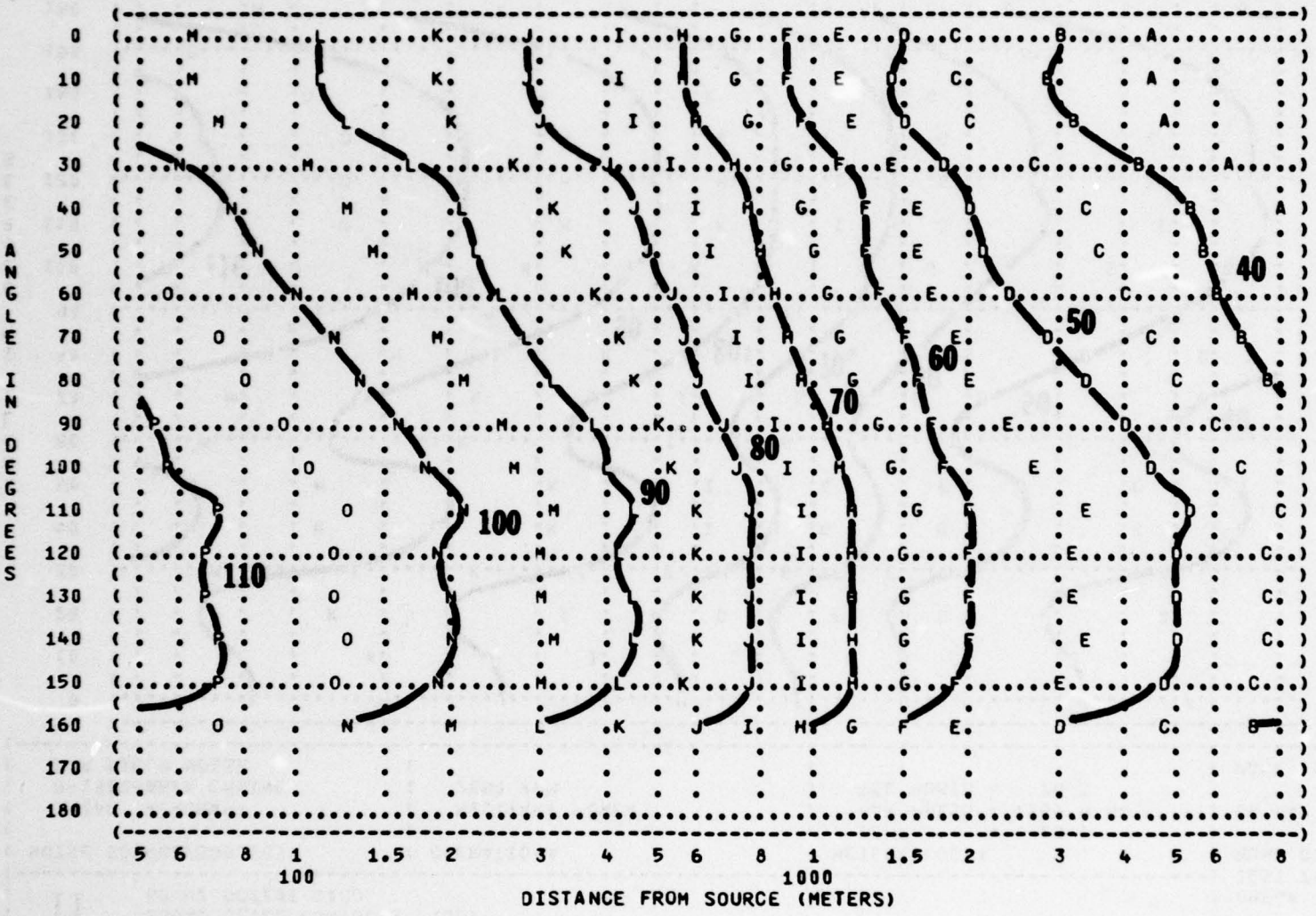


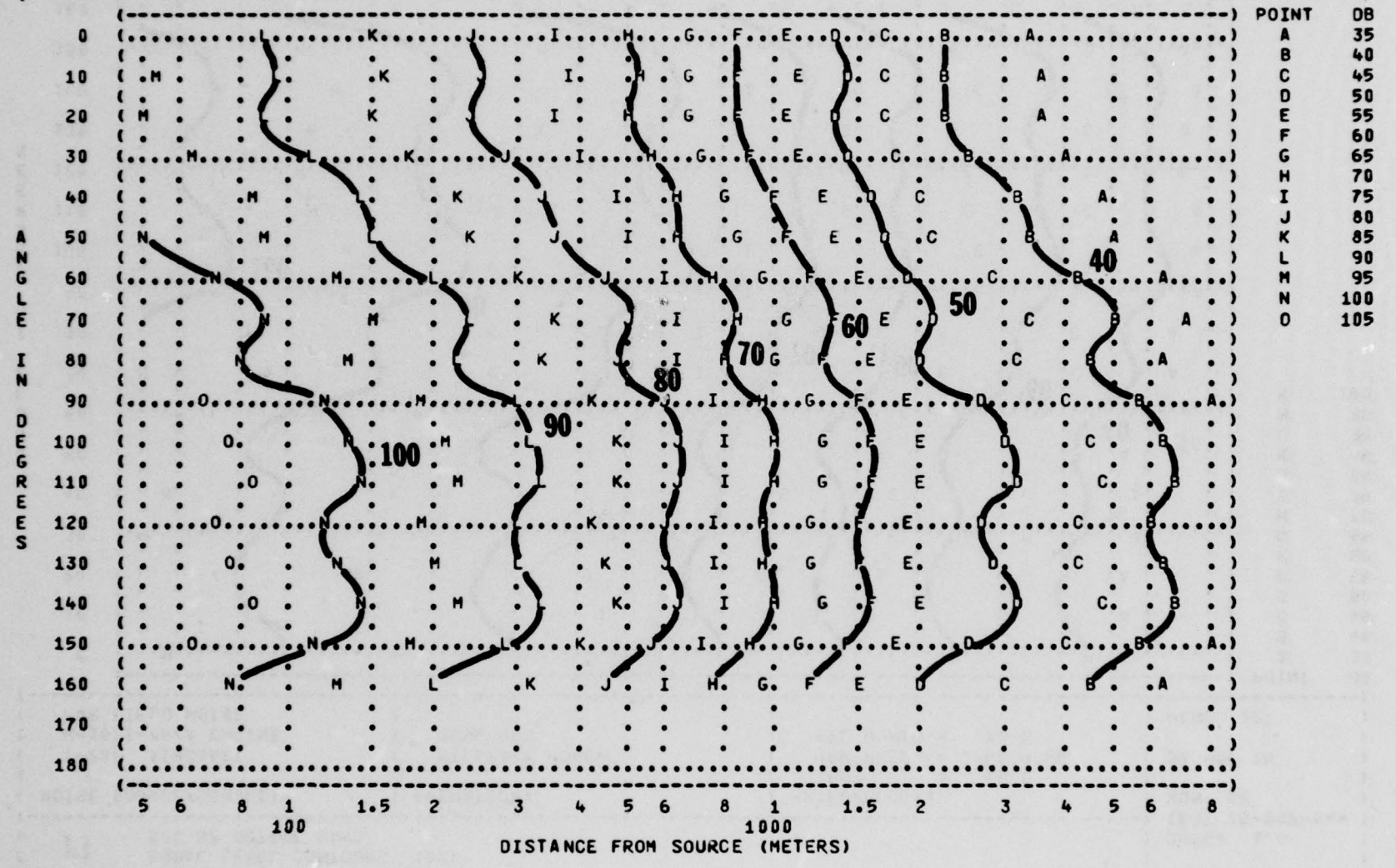
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
PAGE 21



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
PAGE 22

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100

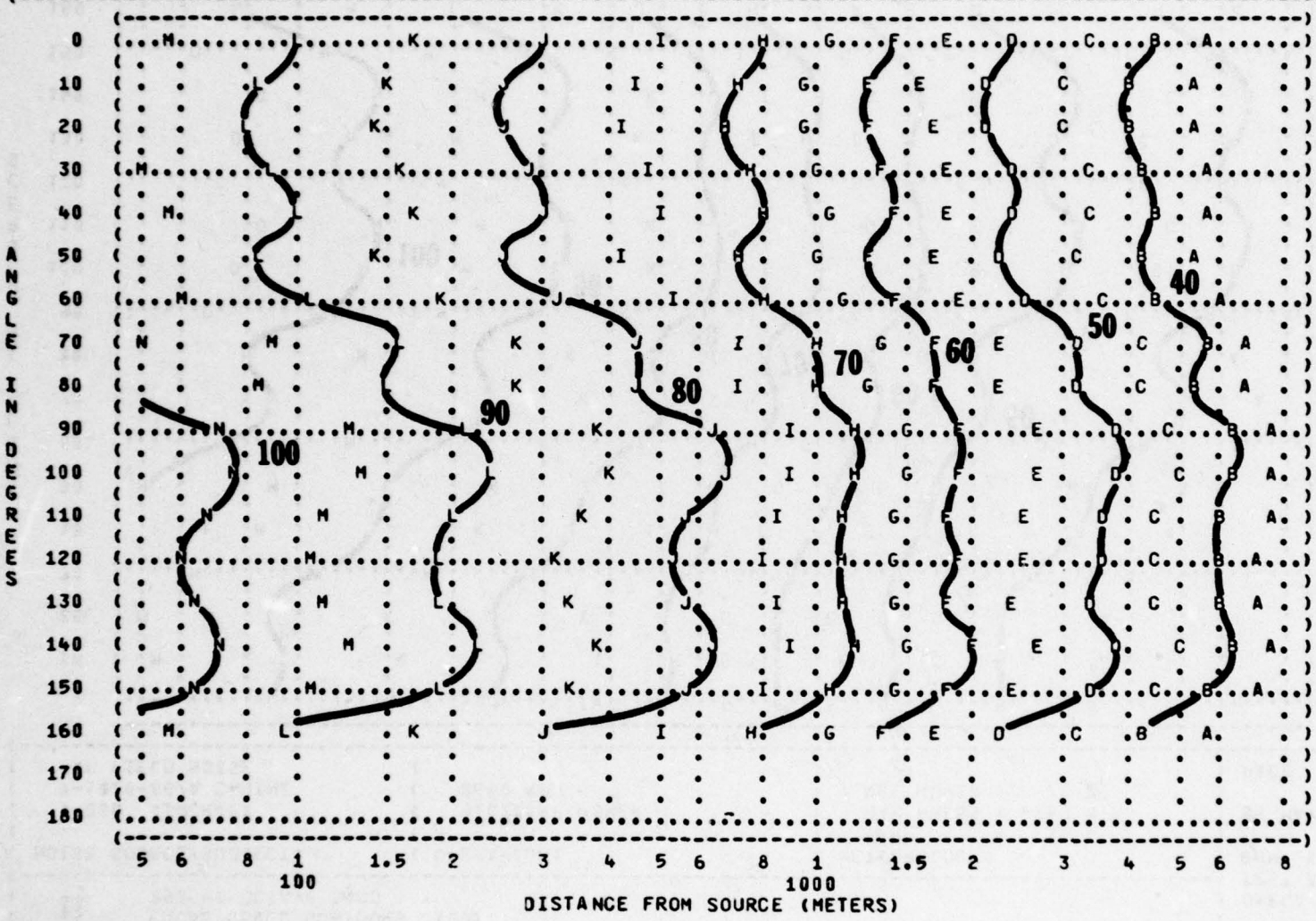


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
PAGE 23

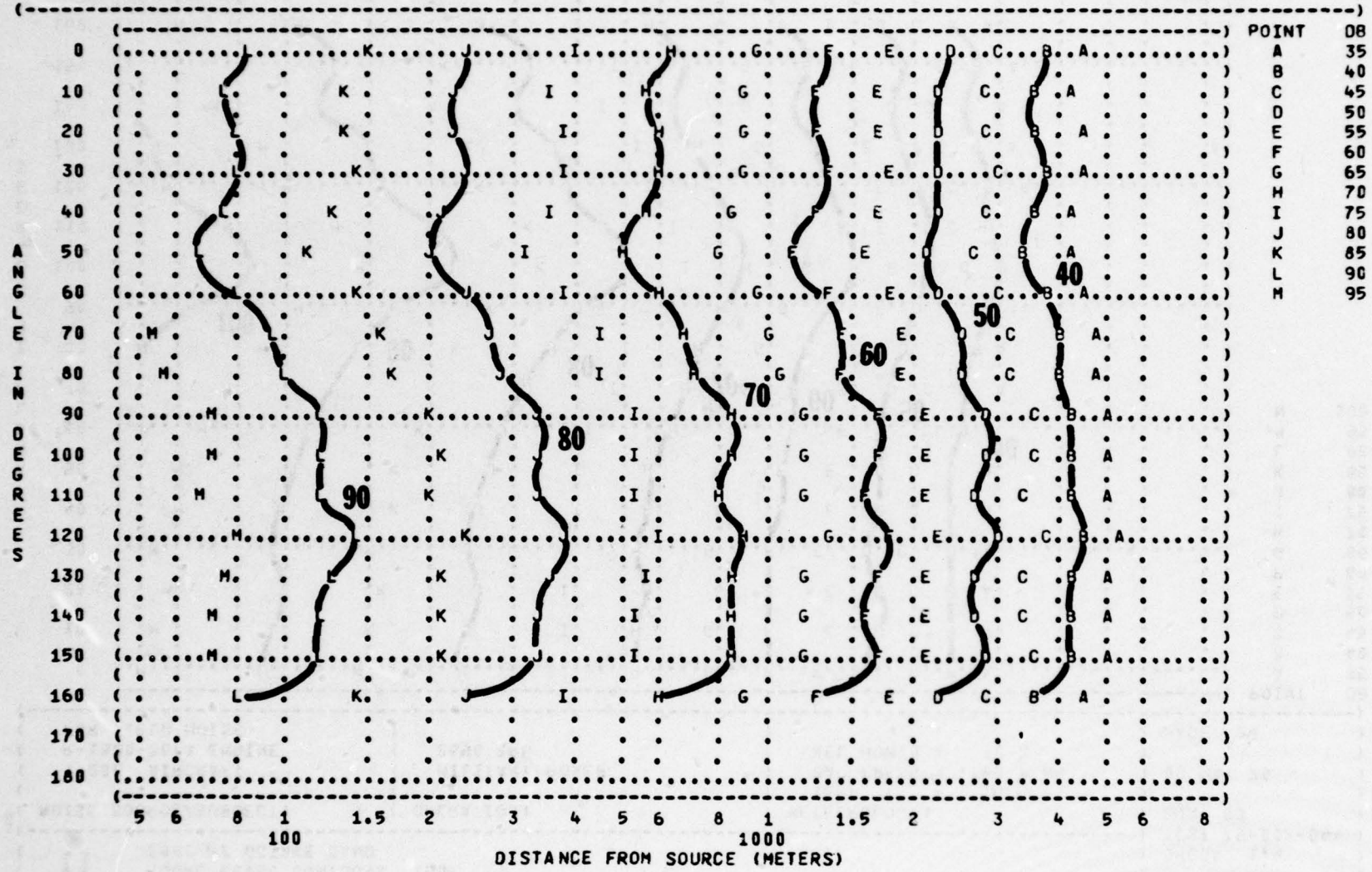


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-044 RUN 03 09 MAY 75 PAGE 24

NOISE SOURCE/SUBJECT: T-28D AIRCRAFT R-1820-86/A ENGINE FAR FIELD NOISE

OPERATION: MILITARY POWER 2650 RPM

METEOROLOGY: TEMP = 15 C BAR PRESS = .760 M HG REL HUMID = 70 %

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100

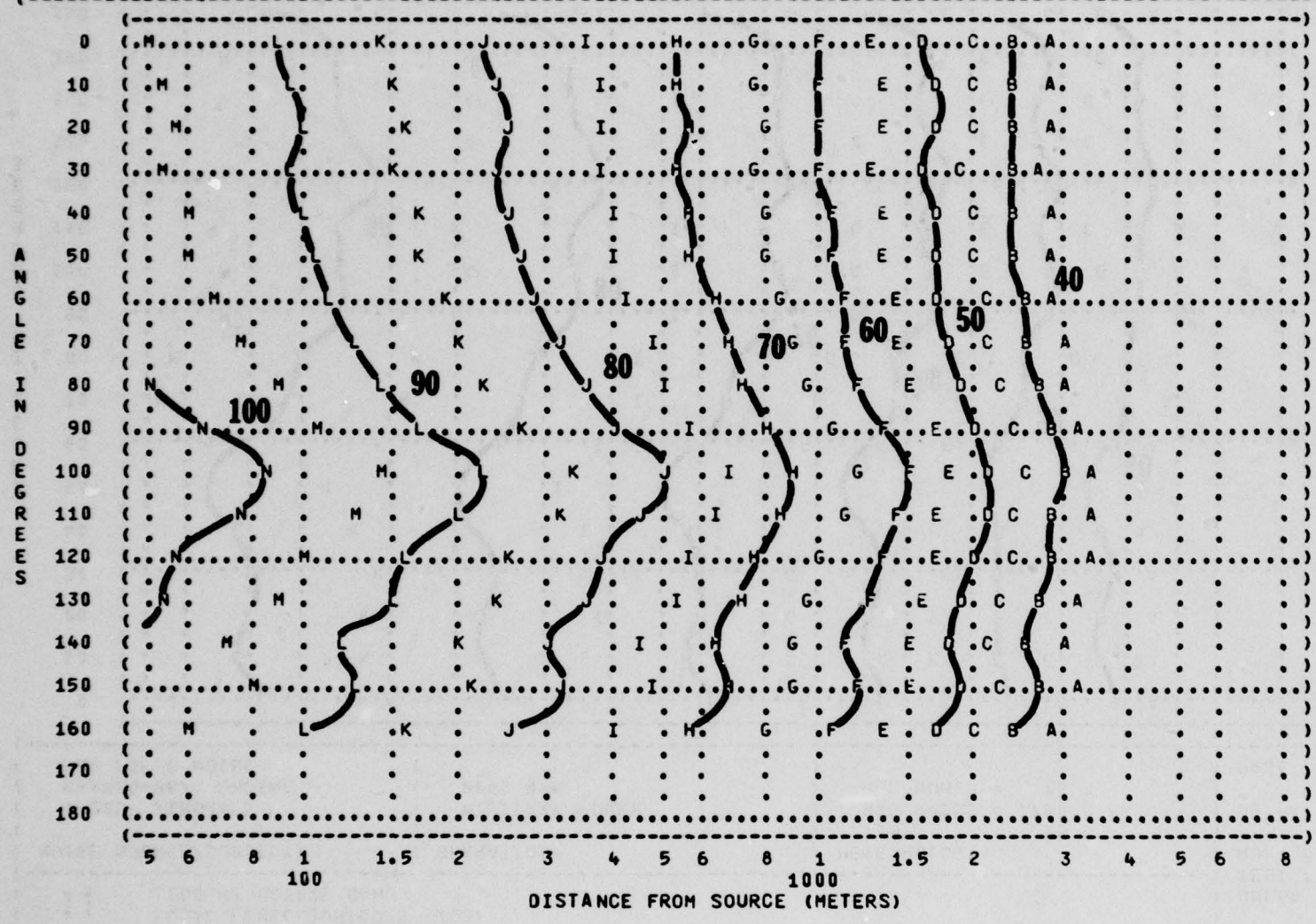


FIGURE: 11

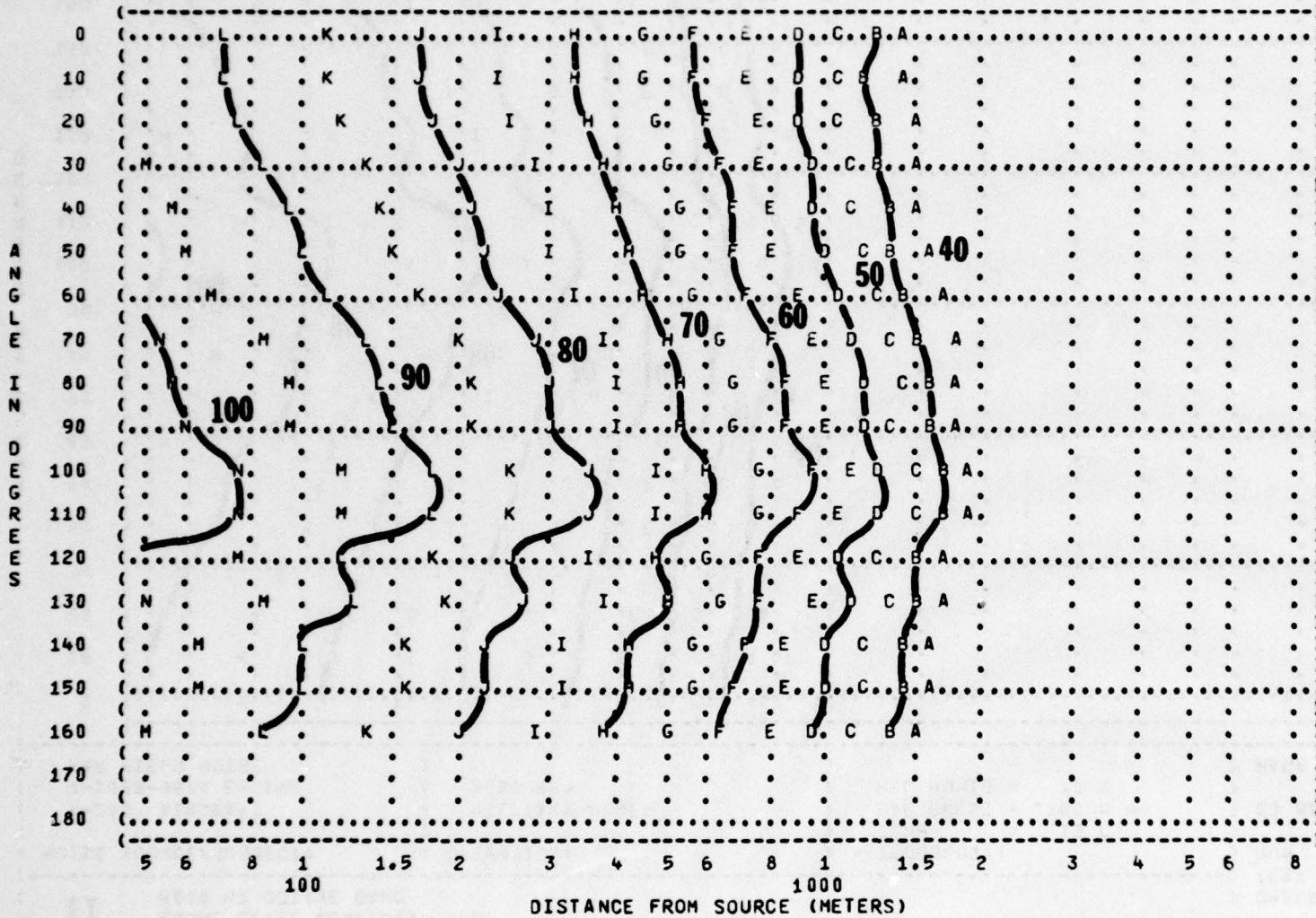
SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
PAGE 25



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-044
RUN 03
09 MAY 75
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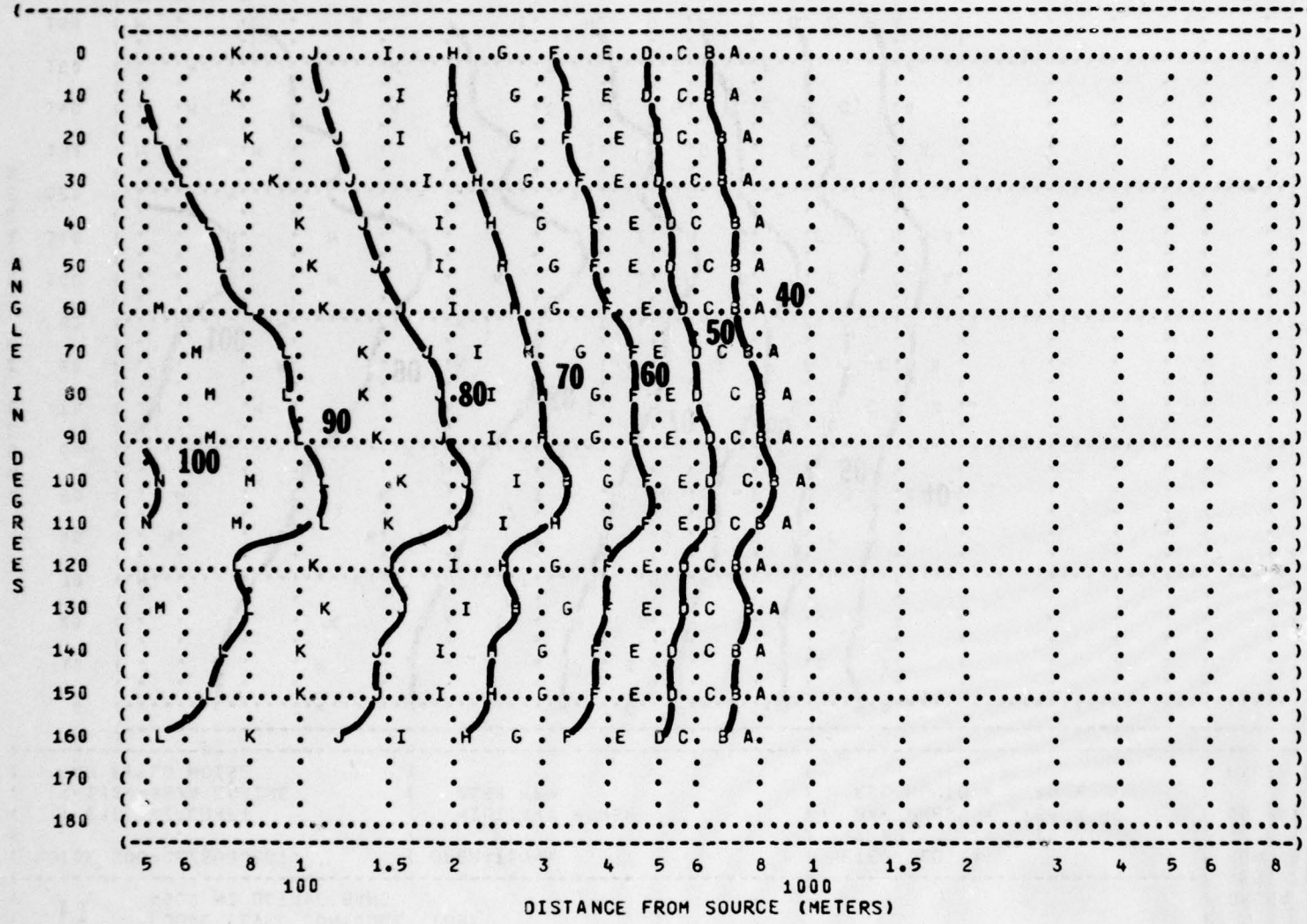
NOISE SOURCE/SUBJECT:
T-28D AIRCRAFT
R-1820-86/A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2650 RPM

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100

*U.S.Government Printing Office: 1977 — 757-080/241